GeoVision inc
The Vision of Security

# GV-Mobile NVR System

## User's Manual

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# User's Manual for GV-Mobile NVR System

Welcome to the GV-Mobile NVR System User's Manual.

The Manual provides an overview of the GV-Mobile NVR System and its accessories. It also includes the instructions to guide you through the installation and use of the GV-Mobile NVR System:

- **Chapter 1, Introduction**

  Identifies the GV-Mobile NVR System's accessories and options.

- **Chapter 2, Overview**

  Identifies the GV-Mobile NVR System's components.

- **Chapter 3, Getting Started**

  Provides step-by-step instructions on setting up the GV-Mobile NVR System.

- **Chapter 4, NVR Health Analysis**

  Introduces how to collect data to obtain the service of NVR health analysis from GeoVision.

- **Chapter 5, Troubleshooting**

  Suggests courses of action if the GV-Mobile NVR System does not seem to be working properly.

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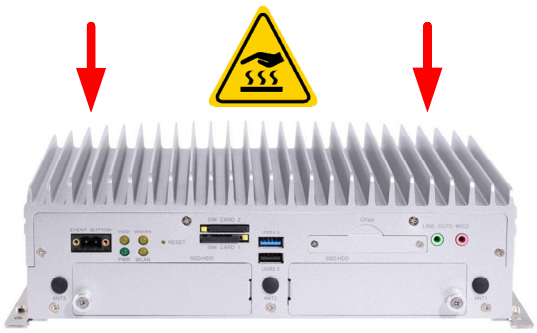
# Safety Instructions

Observe these safety instructions to help ensure against injury to yourself and damage to the product.

- **Read** all safety and installation instructions before you operate the product.
- **Do not operate** the product in high humidity areas or expose it to water or moisture.
- **Do not put** the product in an unstable, a slanting or vibrated place.
- **Do not block** any ventilation opening.
- **Do not install** the product near any heat sources such as radiator, heat register or other apparatus that produce heat.
- **Operate** the product using only the type of power source indicated on the marking label.
- **Do not defeat** the safety purpose of the grounding-type plug. A grounding plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- **Do not overload** wall outlets or extension cords, as this may cause fire or electric shock.
- **Do not use** the product when abnormality occurs, such as emitting smoke from the product, smelling burning, being damaged by drop, invasion of foreign objects inside the product, etc. Be always sure to remove the AC adaptor at once and contact your dealer.
- **Do not use** accessories or attachments not recommended by the manufacturer, as they may cause hazards and void the warranty.
- **Do not attempt** to service the product yourself, as removing the casing may expose you to dangerous voltage and void the warranty.

- **Do not touch** the top panel when you replace the storage drive. The top panel is a dissipation of heat.



# Chapter 1 Introduction

Designed to withstand rugged environment, GV-Mobile NVR System operates at a wide range of temperature and comes with anti-vibration protection, making it ideal for railways, public transits and industrial environment. For storage, it offers up to 2 hot swappable bays of HDD or SSD choice. With built-in GV-NVR, this fanless Mobile NVR system supports up to 32 channels of GV-IP megapixel cameras to provide an all-in-one solution (Live View, Playback, Recording, Backup, CMS) for rough conditions.

Recording solution for harsh environment:

## 1.1 Features

- Powered by Intel Atom / Core i3 Processor
- 64-bit Windows Embedded Standard 7 SP1
- GPU Decoding
- Up to 2 Hot Swappable HDD / SSD bays for up to 2 Terabytes
- Fanless System
- Vibration and Mechanical Shock Protection (2G at 5 ~ 500 Hz for SSD)
- Power Ignition Management (ACC)
- Wide Operating Temperature (-30°C ~ 70°C / -22°F ~ 158°F for SSD)
- 2 Gigabit LAN Ports
- Dual-monitor Display (VGA and DisplayPort)
- Wireless Communication (WiFi / 3G / 4G)
- GPS Support for Vehicle Tracking
- Built-in GV-NVR
- Up to 32 Channels
- 3rd Party IP Cameras with H.264 Compatible (License Required)
- Automatic Connection to GV-IP Cameras
- Video Analysis
- Dual Video Streams
- Fisheye Dewarping Function
- Smart Device Access (iOS and Android)
- E-Mark, EN50155 Certified
- 29 Languages

## 1.2 Application

The GV-Mobile NVR System is designed for digital surveillance of transportation. It can be set up in a public transit to record images from the GV-IP cameras installed in the vehicle and connected to dual monitors with one monitor displaying live view and the other displaying alarm-triggering events. The hot-swap storage drives also provide convenient access to recordings and allow data backup in minutes.

With the GPS receiver, the GV-Mobile NVR System is able to transmit the GPS data collected from the satellite to the GV-GIS (Geographic Information System) through mobile network connection for vehicle tracking.

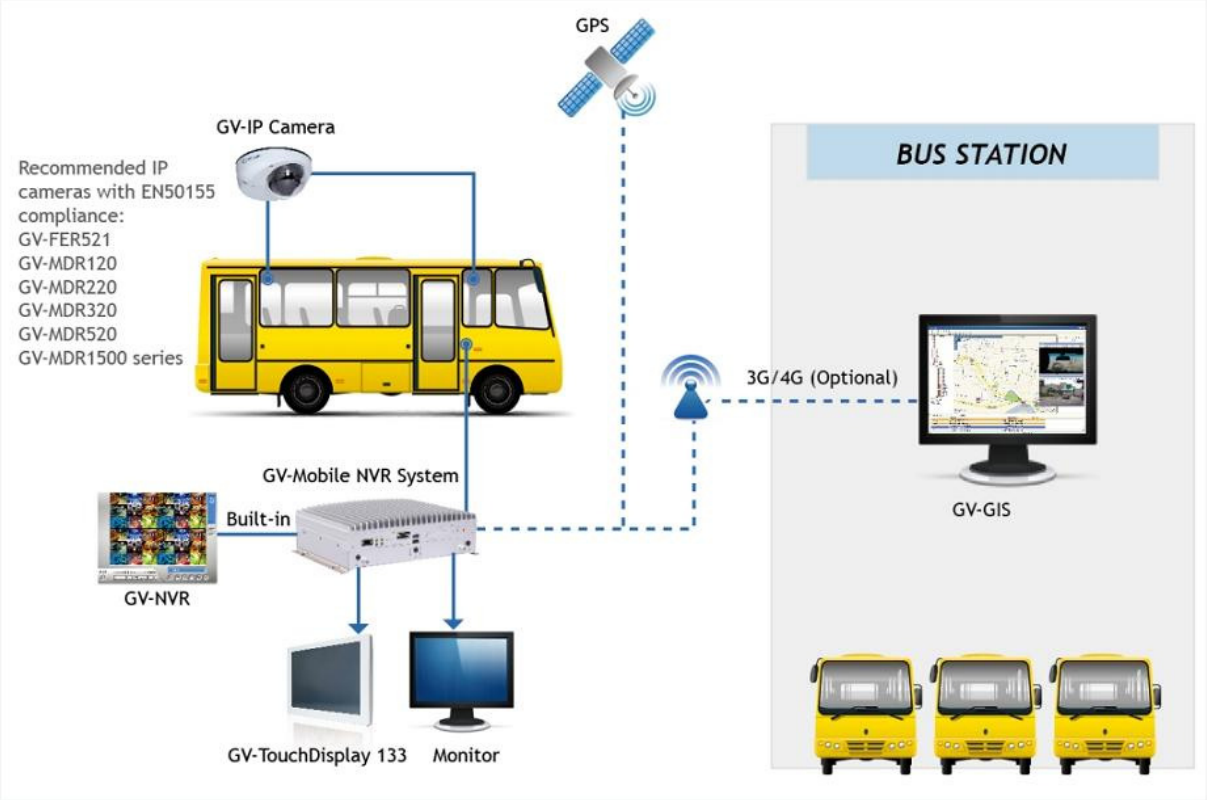



*Figure 1-1*

Other than being applied in a public transit, the GV-Mobile NVR can be installed in a fixed and harsh place, such as a factory. In addition, the automatic video backup for the GV-Mobile NVR is made possible by the LAN connection with GV-Backup Center.

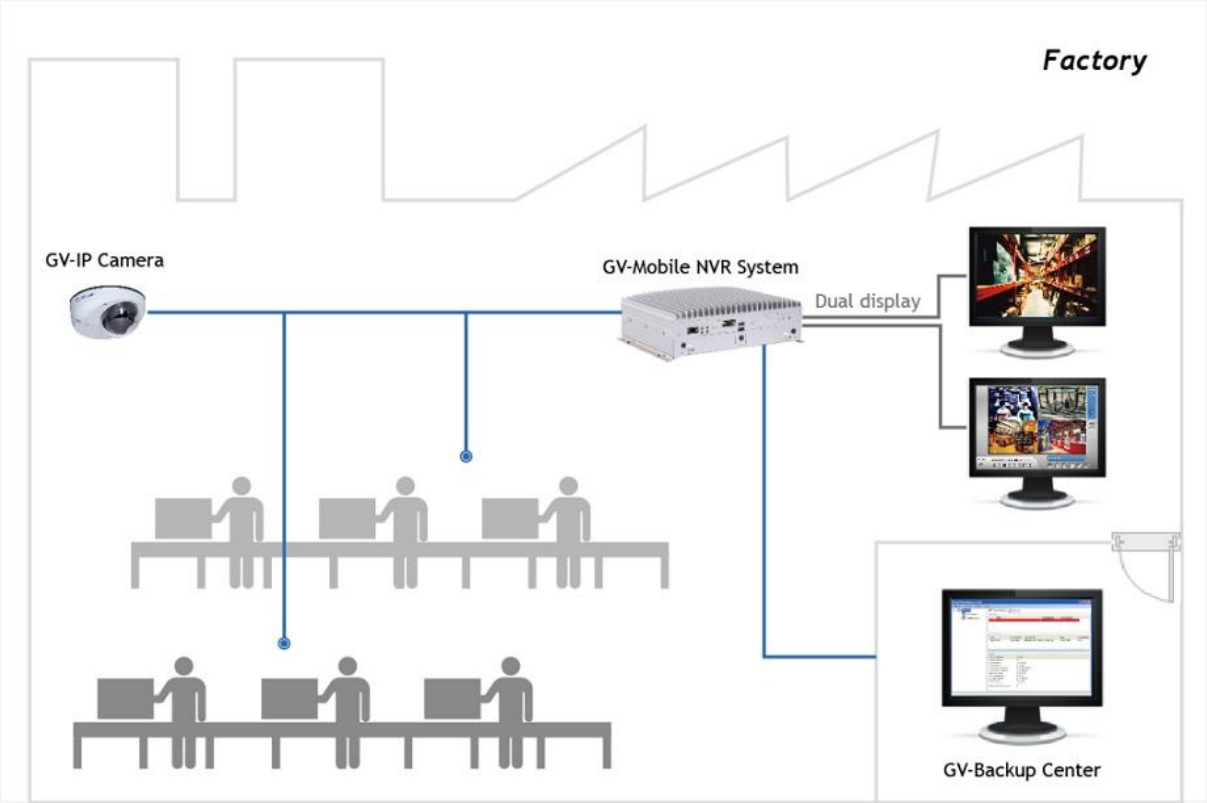



*Figure 1-2*

The GV-FER521 and GV-MDR120 / 220 / 320 / 520 / 1500 Series are complied with EN50155 and suitable for the installation with GV-Mobile NVR System. With a mobile device or an Internet browser, you can access the live view and recorded events anywhere.

*Figure 1-3*

## 1.3 Packing List

The GV-Mobile NVR System package includes the following items. If any of the items are missing or damaged, contact your dealer to arrange a replacement.

**Important:** Please keep the original carton and all packing materials for future shipping need.

1. GV-Mobile NVR System
2. 3-pin Terminal Block (for ACC Connection and DC In)

3. HDD screw x 4 (for GV-MNVR1000 System)
4. HDD screw x 8 (for GV-MNVR2100 System)
5. GPS Antenna
6. GV-NVR Dongle for third-party IP Camera Connection (Optional)
7. DVD (User's Manual and Quick Start Guide included)

## 1.4 Models

The GV-Mobile NVR System has the following models:

| | |
|---|---|
| **GV-MNVR1000 System** | - 1 hot swappable bay of HDD/SSD<br>- Records up to 24 IP channels |
| **GV-MNVR2100 System** | - 2 hot swappable bays of HDD/SSD<br>- Records up to 32 IP channels |

## 1.5 Software License

| | |
|---|---|
| **Free License** | 24 / 32 channels from GV-IP Devices |
| **Maximum License** | 24 / 32 channels from third-party IP devices |
| **Increment for Each License** | 1 to 24 / 32 third-party IP cameras at an increment of 2 |
| **Optional Combinations** | N/A |
| **Dongle Type** | External |

## 1.6 Recommended Hard Disks

GV-Mobile NVR supports up to 2 SATA HDD / SSD (2.5") with up to 2 TB capacities. For the optimal system performance, it is recommended to use the SSD (MLC or SLC) or the enterprise-level HDD, such as HGST Endurastar series and Toshiba automotive HDD.

## 1.7 Maximum Channels and Frame Rate Supported

Below are the total channels and frame rates GV-Mobile NVR System can support with CPU usage of up to approximate 70% to ensure performance and stability.

**For GV IP Cameras**

- GV-MNVR1000 System supports up to 24-Ch GV-IP cameras.

| Resolution | Dual Streams | | Supported Channel | Total Frame Rate |
|---|---|---|---|---|
| | Stream 1 (H.264) | Stream 2 (H.264) | | |
| 1 MP | 1280 x 1024 | 320 x 256 | 20 Ch | 600 fps |
| 2 MP | 1920 x 1080 | 448 x 252 | 17 Ch | 510 fps |
| 3 MP | 2048 x 1536 | 320 x 240 | 24 Ch | 480 fps |
| 5 MP | 2560 x 1920 | 320 x 240 | 16 Ch | 160 fps |

- GV-MNVR2100 System supports up to 32-Ch GV-IP cameras.

| Resolution | Dual Streams | | Supported Channel | Total Frame Rate |
|---|---|---|---|---|
| | Stream 1 (H.264) | Stream 2 (MPEG4) | | |
| 1 MP | 1280 x 1024 | 320 x 256 | 31 Ch | 930 fps |
| 2 MP | 1920 x 1080 | 448 x 252 | 25 Ch | 750 fps |
| 3 MP | 2048 x 1536 | 320 x 240 | 32 Ch | 640 fps |
| 5 MP | 2560 x 1920 | 320 x 240 | 32 Ch | 320 fps |

**For GV Fisheye Cameras (De-warping)**

- GV-MNVR1000 System supports up to 2-Ch GV-Fisheye cameras.

| Resolution | Single Stream (H.264) | Supported Channel | Total Frame Rate |
|---|---|---|---|
| 1 MP | 1280 x 1200 | 2 Ch | 30 fps |
| 2 MP | 1440 x 1376 | 2 Ch | 30 fps |
| 4 MP | 2048 x 1944 | 1 Ch | 15 fps |
| 5 MP | 2560 x 1920 | 1 Ch | 10 fps |

- GV-MNVR2100 System supports up to 10-Ch GV-Fisheye cameras.

| Resolution | Single Stream (H.264) | Supported Channel | Total Frame Rate |
|---|---|---|---|
| 1 MP | 1280 x 1200 | 10 Ch | 150 fps |
| 2 MP | 1440 x 1376 | 8 Ch | 120 fps |
| 4 MP | 2048 x 1944 | 4 Ch | 60 fps |
| 5 MP | 2560 x 1920 | 5 Ch | 50 fps |

**For Third-Party IP Cameras**

- GV-MNVR1000 System supports up to 9-Ch third-party IP cameras.

| Resolution | Single Stream (H.264) | Supported Channel | Total Frame Rate |
|---|---|---|---|
| 1 MP | 1280 x 1024 | 9 Ch | 270 fps |
| 2 MP | 1920 x 1080 | 4 Ch | 120 fps |
| 3 MP | 2048 x 1536 | 4 Ch | 80 fps |
| 4 MP | 2048 x 1944 | 4 Ch | 60 fps |
| 5 MP | 2560 x 1920 | 6 Ch | 60 fps |

- GV-MNVR2100 System supports up to 25-Ch third-party IP cameras.

| Resolution | Single Stream (H.264) | Supported Channel | Total Frame Rate |
|---|---|---|---|
| 1 MP | 1280 x 1024 | 25 Ch | 750 fps |
| 2 MP | 1920 x 1080 | 19 Ch | 570 fps |
| 3 MP | 2048 x 1536 | 15 Ch | 300 fps |
| 4 MP | 2048 x 1944 | 13 Ch | 195 fps |
| 5 MP | 2560 x 1920 | 11 Ch | 110 fps |

## 1.8 Options

Optional devices can expand your GV-Mobile NVR System's capabilities and versatility. Contact your dealer for more information.

| | |
|---|---|
| **GV-IO Box (4 Ports)** | GV-IO Box 4 provides 4 inputs and 4 relay outputs, and supports both DC and AC output voltages. A USB port is provided for PC connection. |
| **GV-IO Box (8 Ports)** | GV-IO Box 8 provides 8 inputs and 8 relay outputs, and supports both DC and AC output voltages. A USB port is provided for PC connection. |
| **GV-IO Box (16 Ports)** | GV-IO Box 16 provides 16 inputs and 16 relay outputs, and supports both DC and AC output voltages. A USB port is provided for PC connection. |
| **GV-Joystick V2** | GV-Joystick V2 facilitates the PTZ camera control. It can be either plugged into the GV-Mobile NVR System for independent use or connected to GV-Keyboard V3 to empower the operation. |
| **GV-Keyboard V3** | The GV-Keyboard V3 is designed to program and operate the system, and it can also be connected with PTZ cameras directly for PTZ control. |
| **GV-IR Remote Control** | Controls GV-Mobile NVR System with the Remote Control. |
| **GV-TouchDisplay133** | The GV-TouchDisplay133 is a 13.3-inch touch panel designed for GV-Mobile NVR System. With the touch panel, you can monitor live images and operate GV-NVR by simply touching the screen. |
| **Power Adapter** | Power adapters are available in 4 regions: U.S.A., Australia, U.K and Europe. |
| **3G / 4G Module** | The 3G or 4G module allows data exchange for the GV-Mobile NVR through the network connection covering wide area. It also empowers the application of GPS for the data transmission to the GV-GIS for real-time vehicle tracking. |
| **WiFi Module** | The WiFi module allows data exchange for the GV-Mobile NVR through wireless network connection within local area. |

**Note:** The WiFi / 3G / 4G module will be built in the GV-Mobile NVR System and tested before shipment. Opening the case and installing the accessories yourself will void the warranty.

# Chapter 2 Overview

## 2.1 Front View

### 2.1.1 GV-MNVR1000 System

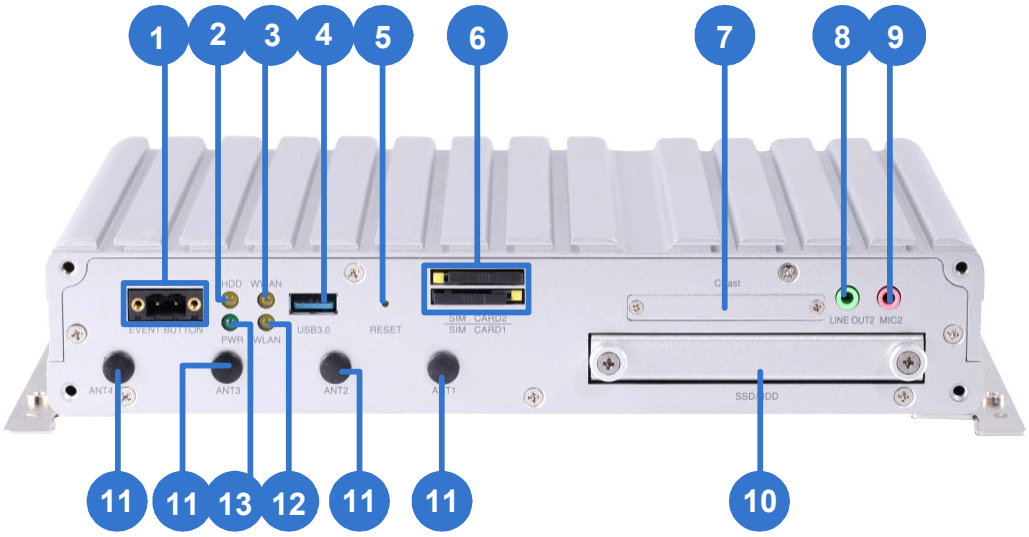



*Figure 2-1*

| No. | Name | No. | Name |
|---|---|---|---|
| 1 | Event Button (Not Functional) | 8 | Audio Line Out Port |
| 2 | HDD Status LED | 9 | Audio Microphone In Port |
| 3 | WWAN LED | 10 | 2.5” HDD/SSD Slot |
| 4 | USB 3.0 Port | 11 | Antenna Port x 4 |
| 5 | Reset Button | 12 | WLAN LED |
| 6 | SIM Card Slot x 2 | 13 | Power Status LED |
| 7 | CFast Card Slot | | |

**Note:**

1. For the status of LED indicators, see *2.1.3 Status Indicator LED*s later in this chapter.
2. The WLAN WiFi and WWAN 3G / 4G module are optional.

## 2.1.2 GV-MNVR2100 System

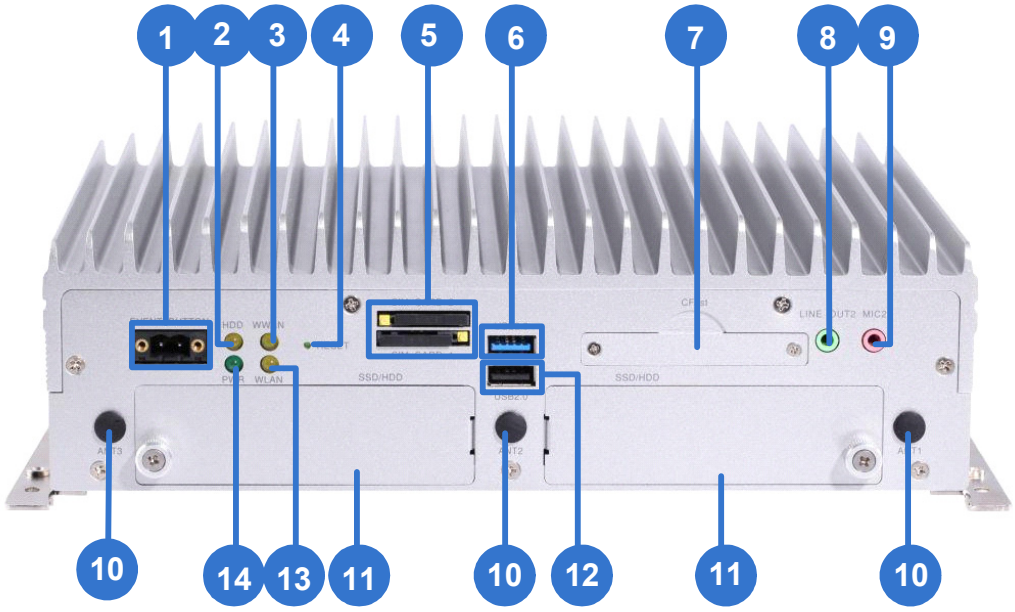



*Figure 2-2*

| No. | Name | No. | Name |
|---|---|---|---|
| 1 | Event Button (Not Functional) | 8 | Audio Line Out Port |
| 2 | HDD Status LED | 9 | Audio Microphone In Port |
| 3 | WWAN LED | 10 | Antenna Port x 3 |
| 4 | Reset Button | 11 | 2.5” HDD/SSD Slot x 2 |
| 5 | SIM Card Slot x 2 | 12 | USB 2.0 Port |
| 6 | USB 3.0 Port | 13 | WLAN LED |
| 7 | CFast Card Slot | 14 | Power Status LED |

**Note:**

1. For the status of LED indicators, see *2.1.3 Status Indicator LED*s later in this chapter.
2. The WLAN WiFi and WWAN 3G / 4G module are optional.

### 2.1.3 Status Indicator LEDs

See the below descriptions for each status LED.

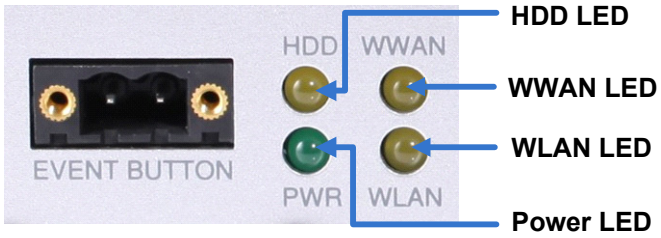



*Figure 2-3*

| Indicator LED | Color | Description |
|---|---|---|
| HDD LED | Orange | Glows when HDD/SSD is active. |
| WWAN LED | Orange | Glows when the WWAN is active. |
| WLAN LED | Orange | Glows when the WLAN is active. |
| Power LED | Green | Glows when power is turned on. |

## 2.2 Rear View

### 2.2.1 GV-MNVR1000 System

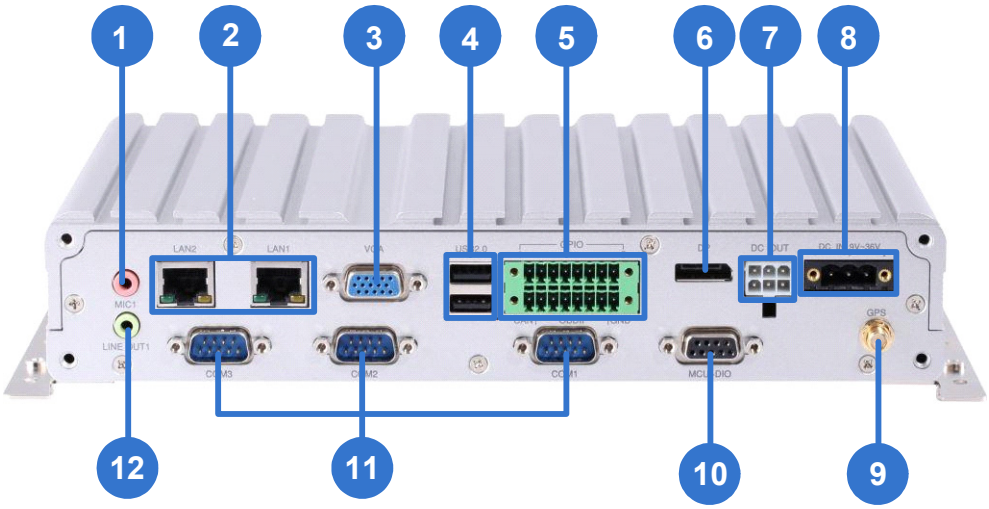



*Figure 2-4*

| No. | Name | No. | Name |
|---|---|---|---|
| 1 | Audio Microphone In Port | 7 | DC Power Output (Not Functional) |
| 2 | Gigabit Ethernet Port x 2 | 8 | DC 10 ~ 35V Power Input |
| 3 | VGA Output | 9 | GPS Antenna Port |
| 4 | USB 2.0 Port x 2 | 10 | MCU DIO Port (Not Functional) |
| 5 | GPIO Terminal Block<br>(Not Functional) | 11 | COM Port x 3 |
| 6 | DisplayPort | 12 | Audio Line Out Port |

### 2.2.2 GV-MNVR2100 System

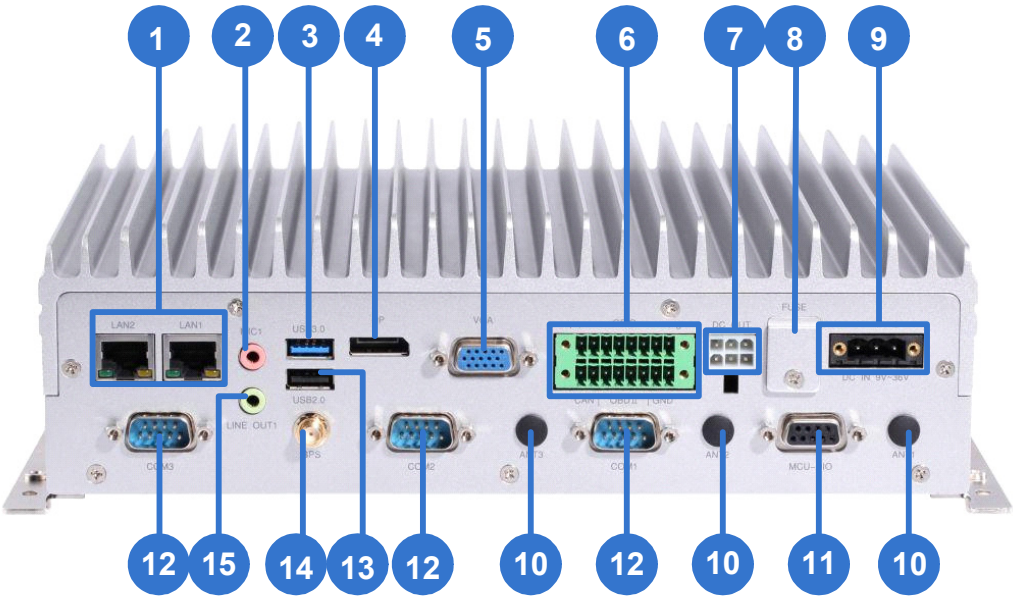



*Figure 2-5*

| No. | Name | No. | Name |
|---|---|---|---|
| 1 | Gigabit Ethernet Port x 2 | 9 | DC 10 ~ 35V Power Input |
| 2 | Audio Microphone In Port | 10 | Antenna Port x 3 |
| 3 | USB 3.0 Port | 11 | MCU DIO Port (Not Functional) |
| 4 | DisplayPort | 12 | COM Port x 3 |
| 5 | VGA Output | 13 | USB 2.0 Port |
| 6 | GPIO Terminal Block<br>(Not Functional) | 14 | GPS Antenna Port |
| 7 | DC Power Output (Not Functional) | 15 | Audio Line Out Port |
| 8 | Fuse (15A) | | |

## 2.3 Wireless Antenna

### 2.3.1 GV-MNVR1000 System

An example of the GV-MNVR1000 System installed with WiFi, 3G / 4G and GPS antennas is shown as below.

**Note:**

1. You can freely arrange and switch WiFi and 3G / 4G antennas in ports.
2. GPS module is already built in the GV-Mobile NVR System. WiFi / 3G / 4G modules are optional.

*Figure 2-6*

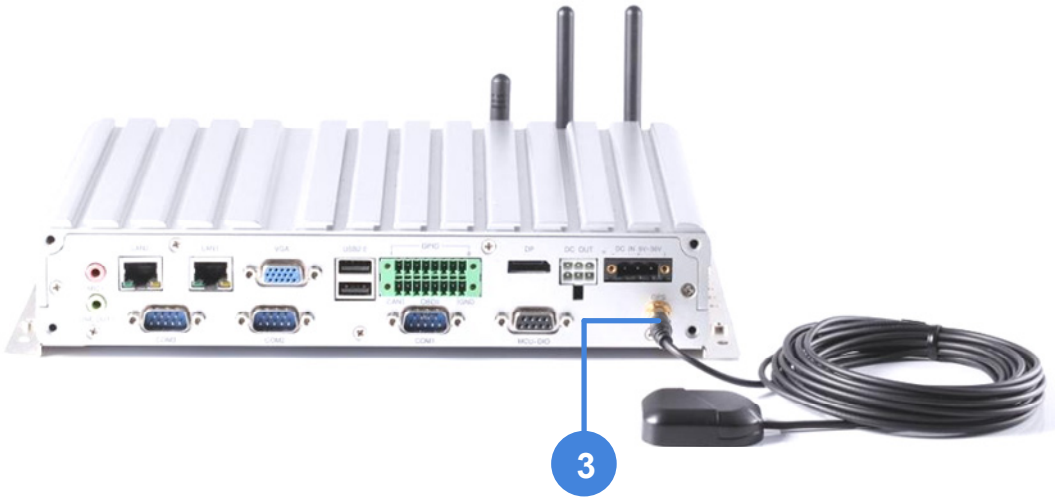



*Figure 2-7*

| No. | Name |
|---|---|
| 1 | WiFi Antenna x 2 |
| 2 | 3G / 4G Antenna |
| 3 | GPS Antenna |

### 2.3.2 GV-MNVR2100 System

An example of the GV-MNVR2100 System installed with WiFi, 3G / 4G and GPS antennas is shown as below.

**Note:**

1. You can freely arrange and switch WiFi and 3G / 4G antennas in ports.
2. GPS module is already built in the GV-Mobile NVR System. WiFi / 3G / 4G modules are optional.

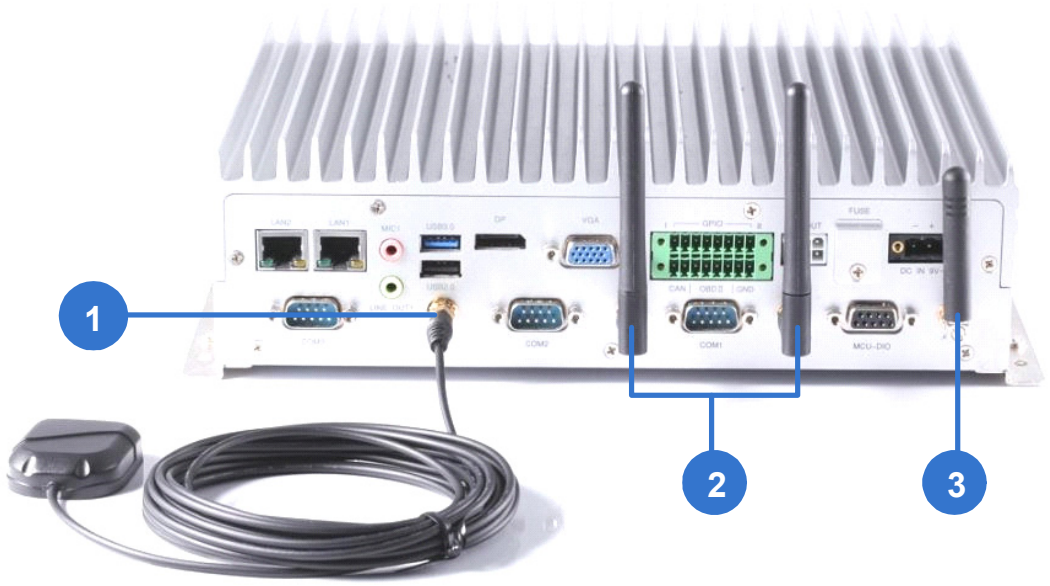



*Figure 2-8*

| No. | Name |
|---|---|
| 1 | GPS Antenna |
| 2 | WiFi Antenna x 2 |
| 3 | 3G / 4G Antenna |

# Chapter 3 Getting Started

## 3.1 Interface Connection

This section describes the equipments required to operate the GV-Mobile NVR System. Here we use the GV-MNVR2100 System for example.

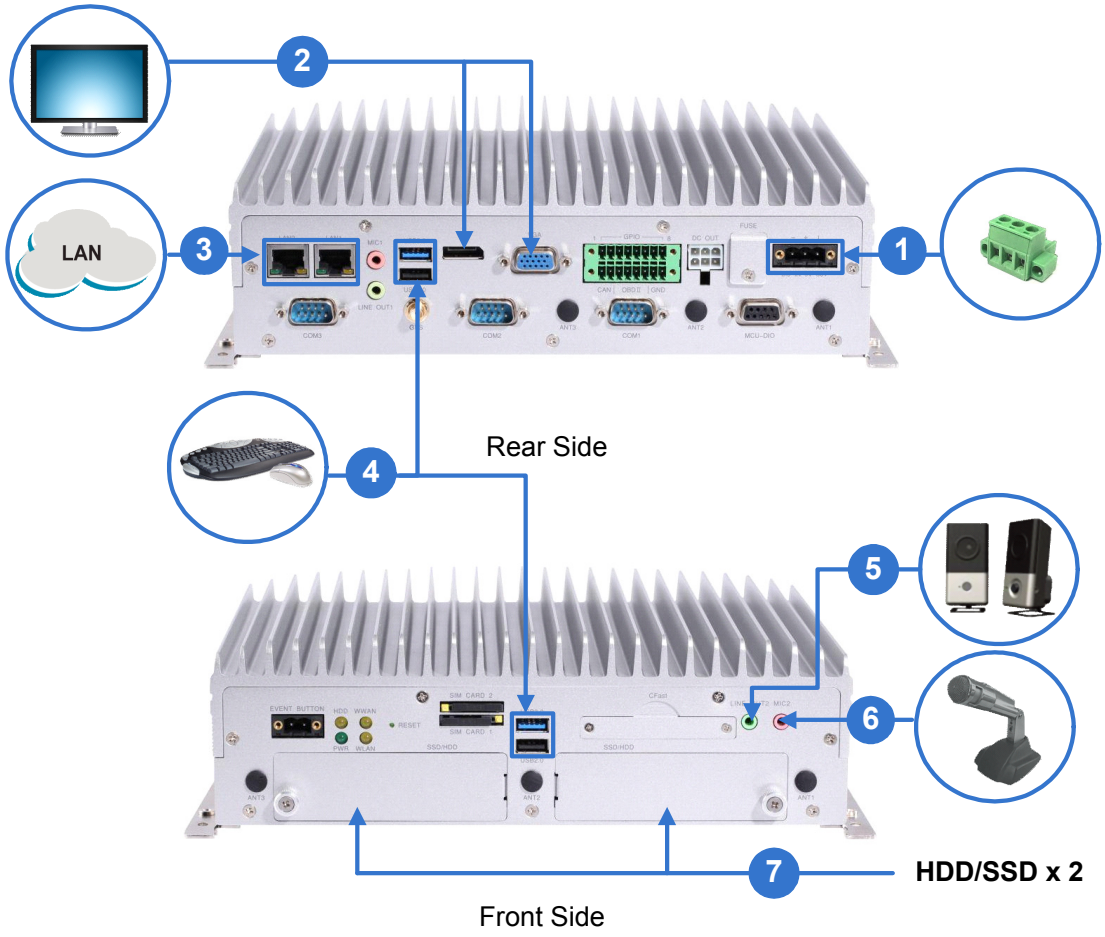



*Figure 3-1*

1. There are two options for connecting the power.
   A. Connect the GV-Mobile NVR System to the vehicle's power battery and ACC wire using the supplied 3-pin terminal block. The system will automatically start after you turn on the vehicle ignition. Power is supplied to the system as long as the vehicle ignition is on.

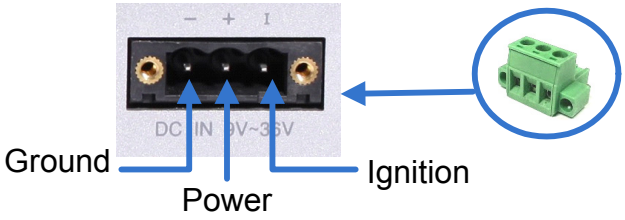



*Figure 3-2*

   B. Optionally purchase a power adapter from GeoVision. See 3.2 *Turning on and off the Power*.

2. Use the VGA cable or the DisplayPort cable to connect the unit to the monitor.

---

**Note:** The GV-Mobile NVR System supports dual-monitor display. You can connect two monitors by using the VGA connector and DisplayPort.

---

3. Connect one end to the Gigabit Ethernet port and the other end to Network by using the RJ-45 cable.
4. Connect the keyboard and the mouse to the USB ports.
5. Connect the speaker to the Audio Line Out port.
6. Optionally connect the microphone to the Audio Microphone In port for two-way audio with IP cameras.
7. Insert the 2.5" HDDs or SSDs into the storage slots. For details, see *3.3 Installing the Storage Drive*.

After the unit is powered on, the Power Indicator LED (Figure 2-3) shows constant green.

Before recording, you need to format the storage drive and add it to the recording path of the system. For formatting the storage drive, see *3.4 Formatting the Storage Drive*. For adding the storage drive to the recording path, see *3.5 Adding the Storage Drive* to the Recording Path.

## 3.2 Turning on and off the Power

The GV-Mobile NVR System is designed to connect to the vehicle's ACC wire. However, you can optionally purchase a power adapter (AC 100 ~ 240V) from GeoVision for power connection.

### 3.2.1 Connecting to the ACC Wire

To turn on the GV-Mobile NVR System, connect the vehicle's ACC and power wires to the unit's power input using the supplied 3-pin terminal block. The system will automatically start after you power on the vehicle for 5 seconds.

After you power off the vehicle for 3 seconds, the system will turn off automatically.

### 3.2.2 Using the Power Adapter

To turn on and off the GV-Mobile NVR System using an optional power adapter from GeoVision, follow the steps below.

1. Plug the 3-pin terminal block connected with power adapter to the panel's power pins. The GV-Mobile NVR System will be powered on about 5 seconds later.

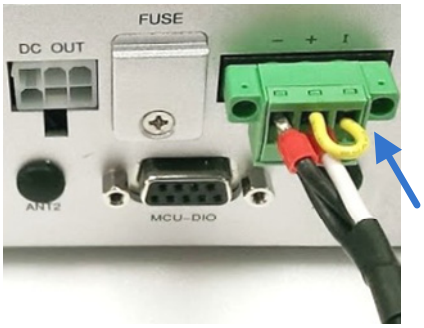



*Figure 3-3*

2. To turn off the GV-Mobile NVR System, shut down the system through the Windows desktop.

### Using Rocker Switch to Simulate ACC Ignition

For quick control of turning on or off the GV-Mobile NVR System, you can install a rocker switch to the 3-pin terminal block with the optional power adapter. For the connection and operation, follow the steps below.

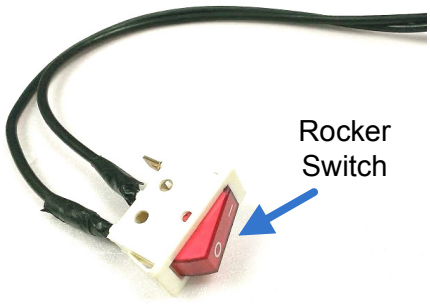



*Figure 3-4*

1. For the 3-pin terminal block with optional power adapter, unplug the U-shaped wire from the Power and Ignition pins.

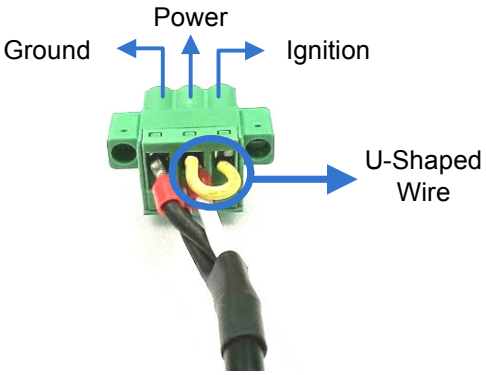



*Figure 3-5*

2. Connect the wires of the rocker switch to the Power and Ignition pins respectively.

*Figure 3-6*

3. Plug the terminal block to the panel's power pins.

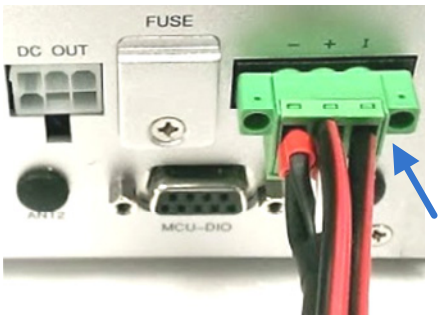



*Figure 3-7*

4. Press the rocker switch to turn on the GV-Mobile NVR System without operating on the Windows desktop. Once the rocker switch is on, the GV-Mobile NVR System will be powered on about 3 seconds later.
5. To turn off the GV-Mobile NVR System, press the rocker switch again.

---

**Note:** After the power is on, the GV-Mobile NVR System will run a series of self-tests, and a series of messages may be displayed as the various hardware and software subsystems are activated. After the process is finished, the GV-System Software (Multicam Surveillance System) should load automatically and bring you to the main screen.

---

## 3.3 Installing the Storage Drive

The GV-Mobile NVR System uses SATA hard drive / SSD for video data storage. Before recording, be sure to install the storage drive.

### 3.3.1 GV-MNVR1000 System

1. Loosen the thumb screws on the HDD/SSD slot and pull out the drive drawer.

*Figure 3-8*

2. Insert the storage drive into the drive drawer with the SATA data and power connector facing towards the end.

*Figure 3-9*

3. Secure the storage drive with the drive drawer using the supplied 4 screws.

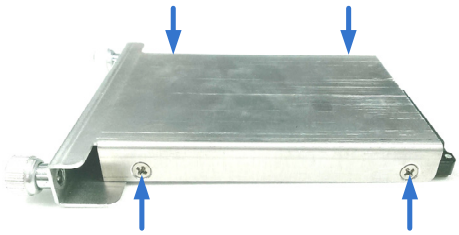


*Figure 3-10*

**Note:** For convenience, it is suggested to secure the screws with the drive drawer being placed downward.

4. Insert the drive drawer into the HDD/SSD slot and secure the thumb screws.

## 3.3.2 GV-MNVR2100 System

1. Loosen the thumb screws on the HDD/SSD slots and remove the covers.

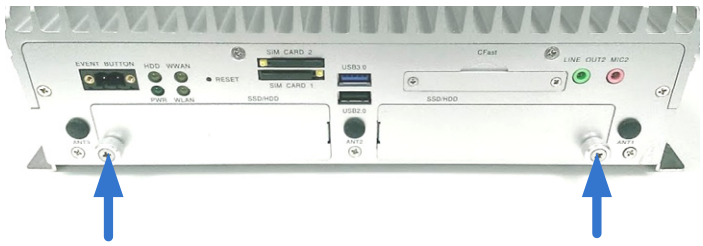


*Figure 3-11*

2. Press the release latch and pull out the drive drawer using the drawer handle that pops out.

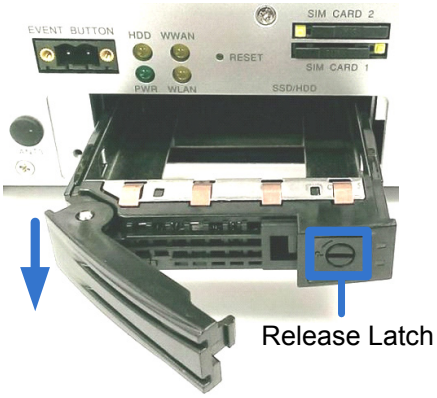



*Figure 3-12*

3. Insert the storage drive into the drive drawer with the SATA data and power connector facing towards the end.

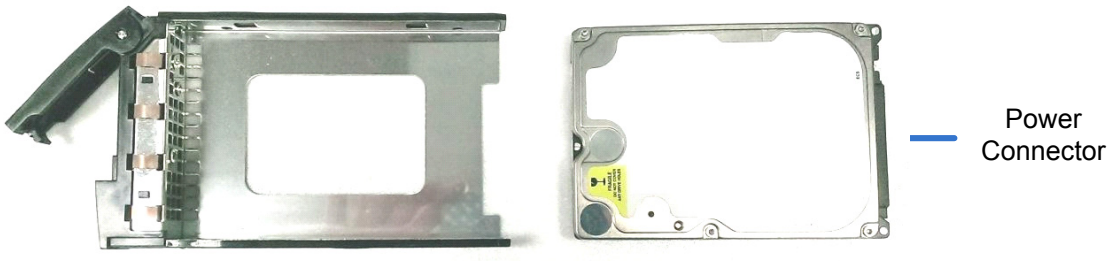



*Figure 3-13*

4. Secure the storage drive with the drive drawer using the supplied 4 screws.

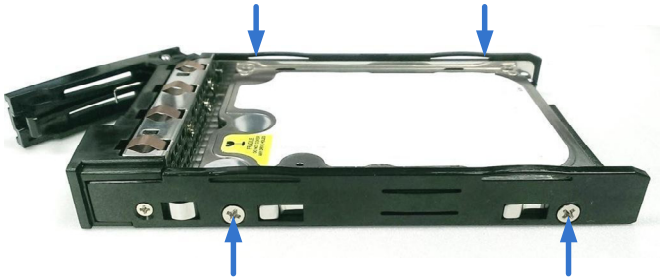


*Figure 3-14*

5. Insert the drive drawer into the HDD/SSD slot, press the drawer handle back and rotate the release latch until it is vertical to lock the drive drawer.

*Figure 3-15*

6. Put the cover back and secure the thumb screw.
7. Repeat the steps above to install the storage drive in the other HDD/SSD slot.

The HDD Status LED glows, and the storage drive is ready for use.

## 3.4 Formatting the Storage Drive

After installing HDD / SSD to your system, you will need to format the storage drive before recording.

1. On the GV-Desktop, click the **Programs** button, and select **Disk Management**.

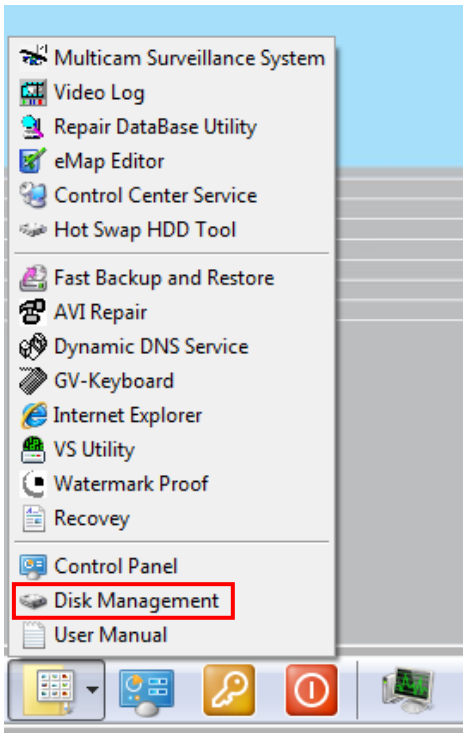



*Figure 3-16*

2. Type the ID and password in the dialog box. The default ID and password are "**0000**".

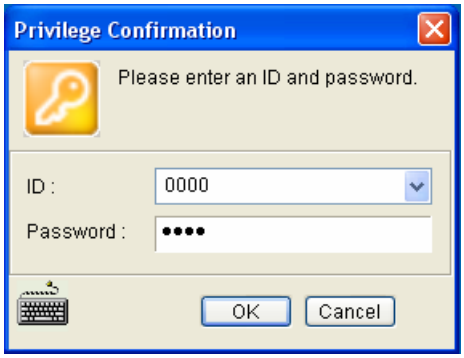



*Figure 3-17*

3. Right-click in the unallocated space of a new drive, and select **New Simple Volume**.

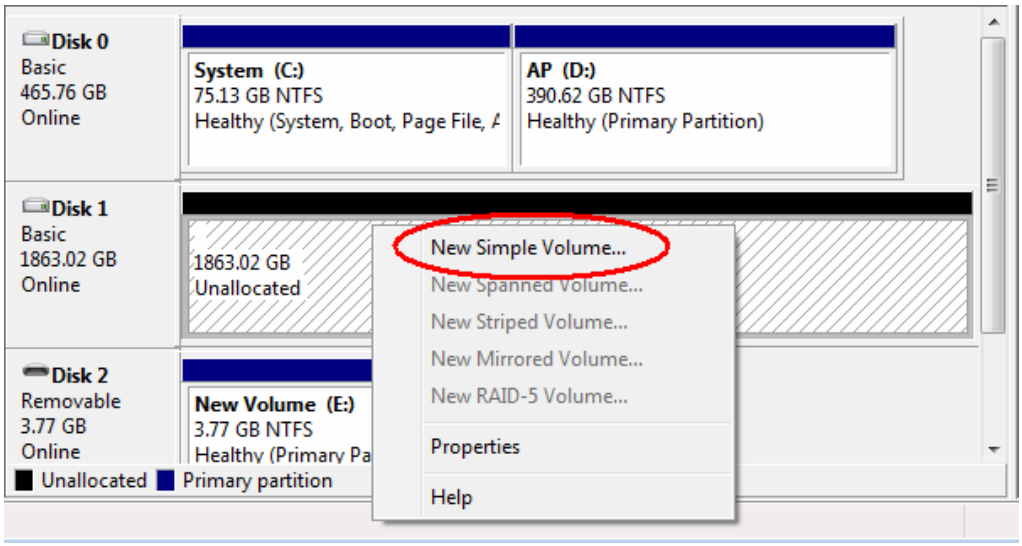



*Figure 3-18*

4. The New Simple Volume Wizard appears. Click **Next** to continue.

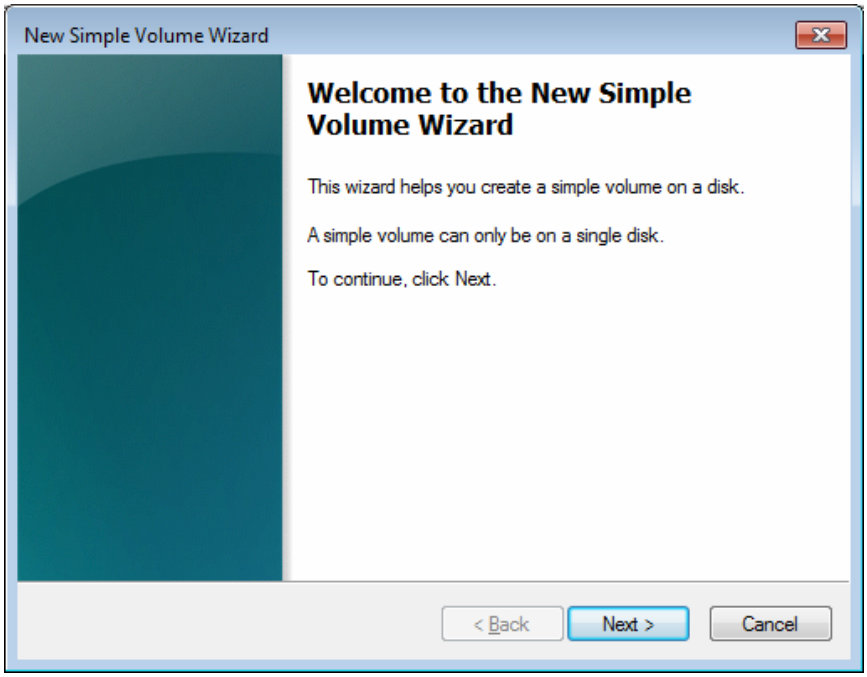

New Simple Volume Wizard
Welcome to the New Simple Volume Wizard
This wizard helps you create a simple volume on a disk.
A simple volume can only be on a single disk.
To continue, click Next.
< Back
Next >
Cancel

*Figure 3-19*

5. The default partition size is the same as the maximum disk space. Make changes if necessary and click **Next** to continue.

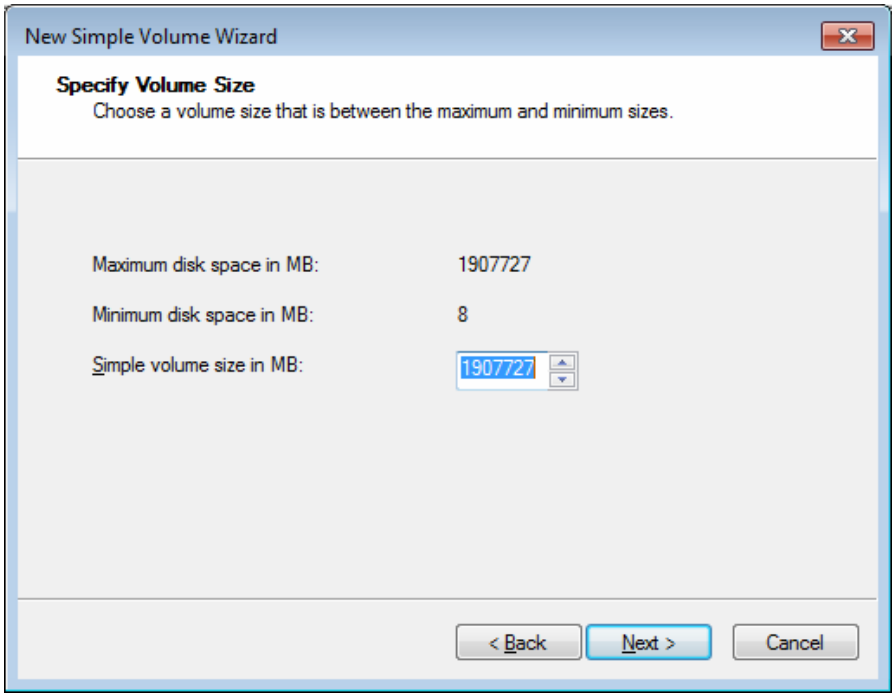



*Figure 3-20*

6. Assign a drive path that is not in use by other devices and click **Next** to continue.

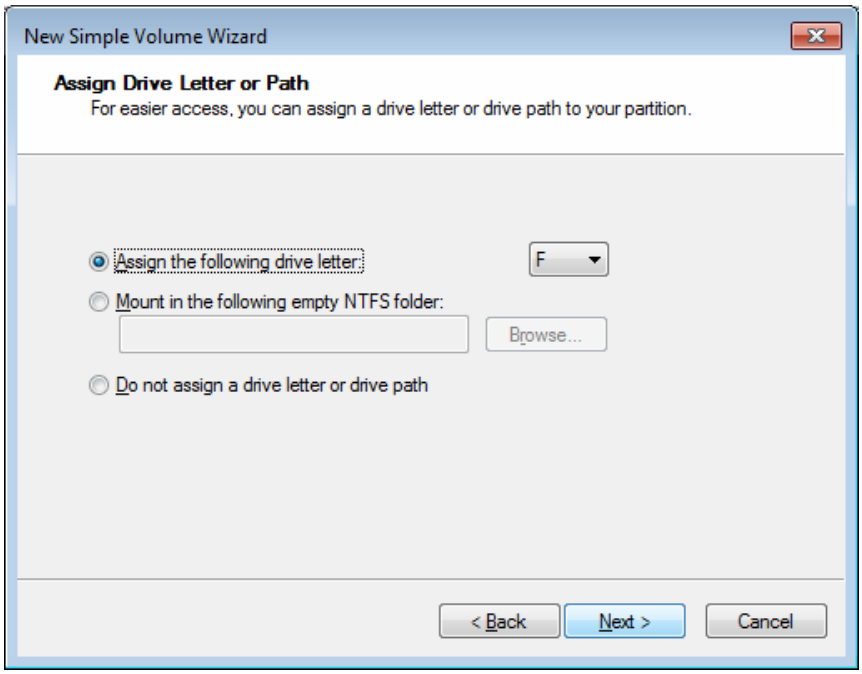

New Simple Volume Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
Assign the following drive letter:
F
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
Cancel

*Figure 3-21*

---

**Note:** The default drive path starts from D:\.

---

7. Type a name in the **Volume label** box, ex. HDD1, and click **Next** to continue.

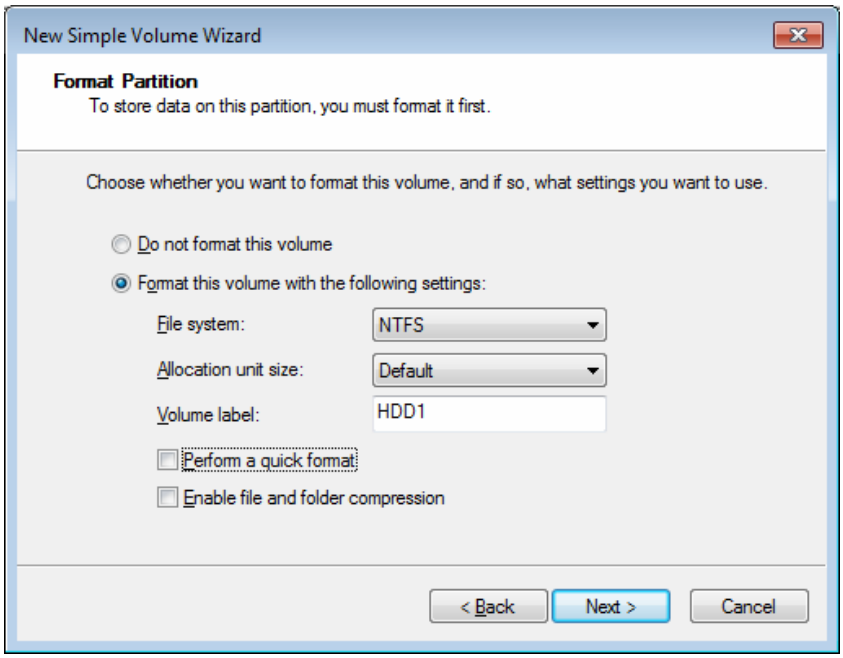

New Simple Volume Wizard
Format Partition
To store data on this partition, you must format it first.
Choose whether you want to format this volume, and if so, what settings you want to use.
Do not format this volume
Format this volume with the following settings:
File system:
NTFS
Allocation unit size:
Default
Volume label:
HDD1
Perform a quick format
Enable file and folder compression
< Back
Next >
Cancel

*Figure 3-22*

8. When the formatting is complete, click **Finish** to close the wizard.

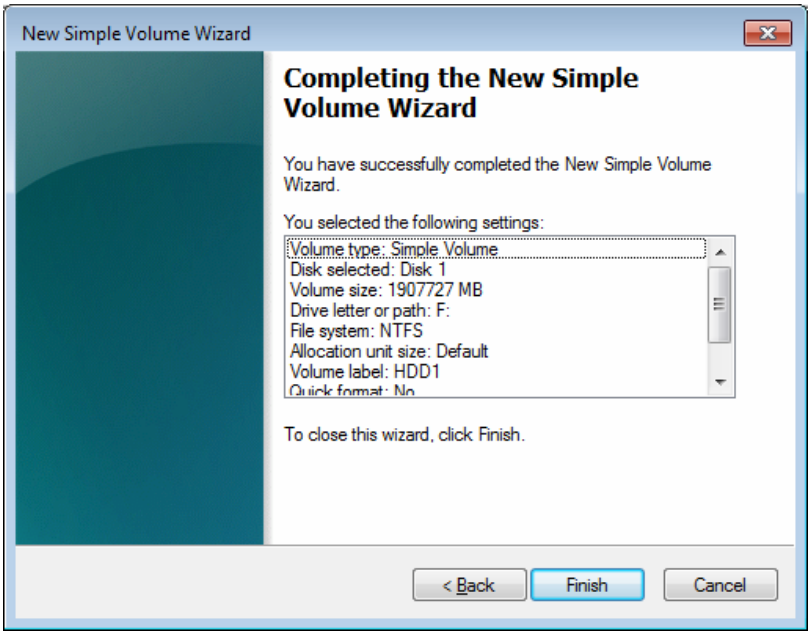

New Simple Volume Wizard
Completing the New Simple Volume Wizard
You have successfully completed the New Simple Volume Wizard.
You selected the following settings:
Volume type: Simple Volume
Disk selected: Disk 1
Volume size: 1907727 MB
Drive letter or path: F:
File system: NTFS
Allocation unit size: Default
Volume label: HDD1
Quick format: No
To close this wizard, click Finish.
< Back
Finish
Cancel

*Figure 3-23*

9. When the drive is successfully initialized, partitioned, and formatted, its status description should display "*Healthy*."

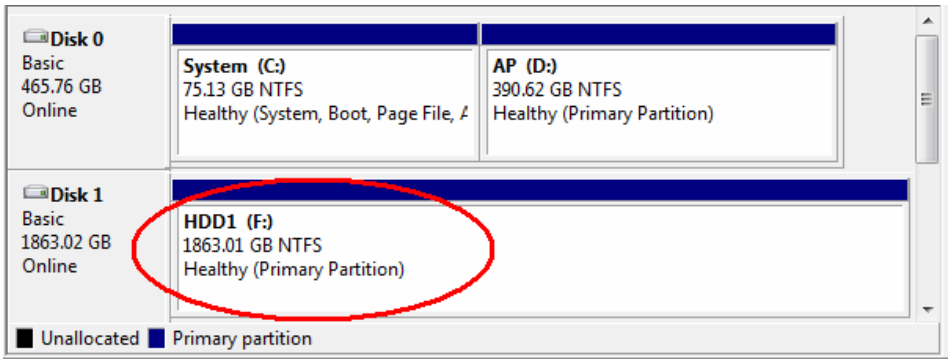



*Figure 3-24*

## 3.5 Adding the Storage Drive to the Recording Path

For GV-Mobile NVR System, you need to add the formatted storage drives to the recording path before recording.

1. On the GV-Desktop, click the **Programs** button and select **Hot Swap HDD Tool**. The MediaMan Tools window appears.

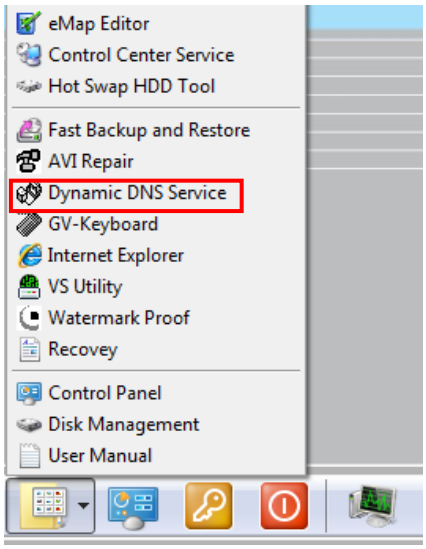



*Figure 3-25*

2. If a storage drive is already inserted, right-click it in the MediaMan Tools window, select **Add for recording** and select the storage group from the drop-down list.
3. If a storage drive is not inserted, follow the steps below.
   A. Insert a HDD / SSD to the GV-Mobile NVR System. This dialog box appears.

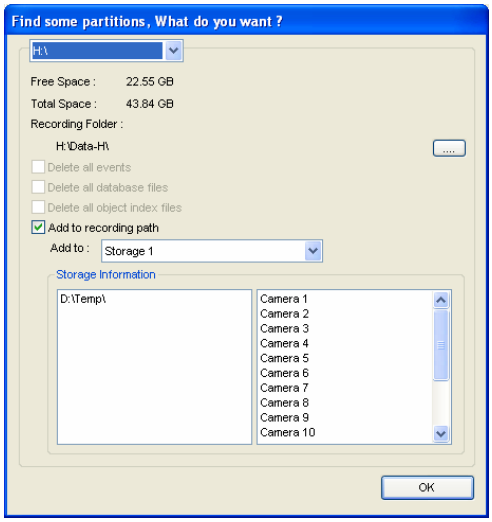



*Figure 3-26*

   B. Click **Add to recording path** and select the storage group from the drop-down list.

**Note:** Storage 1 is the default storage group.

4. Click **OK** to automatically configure the storage drive to the recording path.
5. In the MediaMan Tools window, if the storage drive is successfully added to store data, its Status field should display "*Standby*".

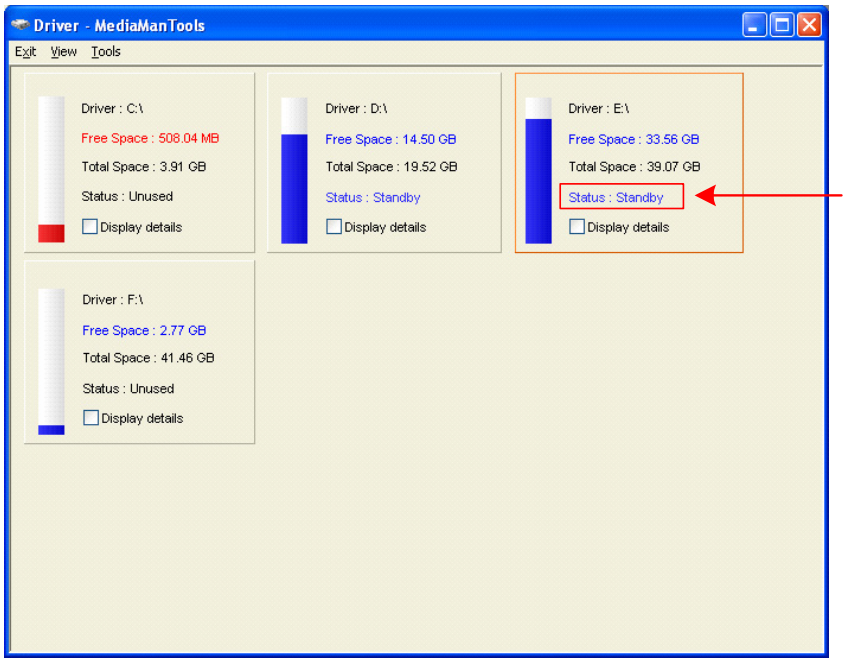



*Figure 3-27*

6. To add another formatted storage drive, repeat the above steps.

For the details on using Hot Swap HDD Tool, see *Hot-Swap Recording*, Chapter 11, *DVR User's Manual* (GV-Desktop < **Program** button < **User Manual**).

## 3.6 Replacing the Storage Drive

You can replace the HDD / SSD without shutting down the GV-Mobile NVR System.

1. Stop the recording and make sure the HDD Status LED (No. 2, Figure 2-1 / 2-2) is off.
2. To replace a new storage drive:
   - For GV-MNVR1000 System, see *3.1.1 GV-MNVR1000 System* to replace a new storage drive.
   - For GV-MNVR2100 System, see *3.1.2 GV-MNVR2100* System to replace a new storage drive.

---

**Warning:** Do not touch the top panel when you replace the storage drive. The top panel is a dissipation of heat and it may be extremely hot.

---

## 3.7 Setting Up On-Screen LED Panel

For GV-Mobile NVR System, a LED panel on the screen provides a quick indication of the activity status of the storage drives.

*Figure 3-28*

| LED Color | Description |
|---|---|
| Gray | - No storage drive is assigned to this LED.<br>- The system is not started. |
| Green | A storage drive is assigned to this LED. |
| Red | The storage drive is full. |
| Flashing Green | The system drive is recording. |
| Flashing Red | The storage drive is recycling. |

1. On the GV-Desktop, click the **Programs** button, and select **Hot Swap HDD Tool**.
2. Click **Tools** on the menu bar, and select **Setup LED Panel**. This dialog box appears.

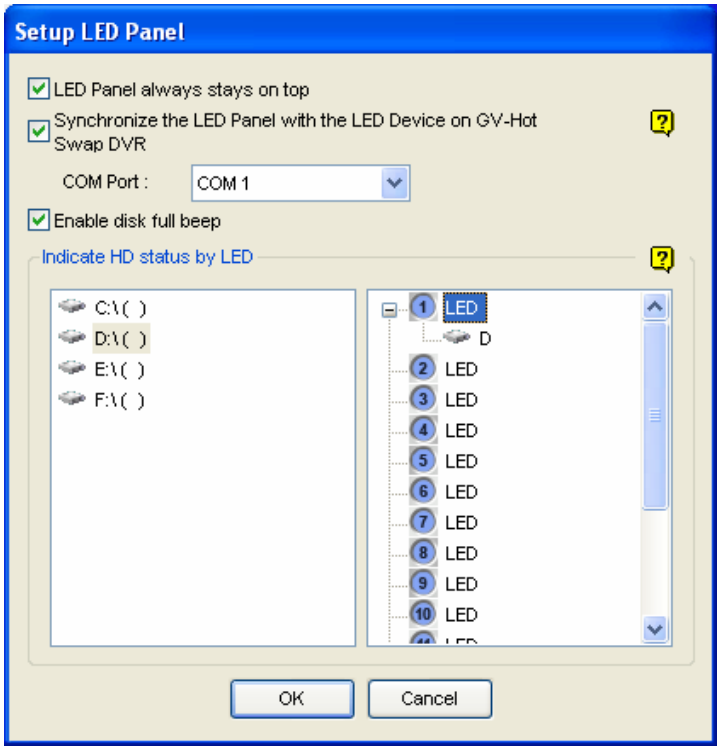



*Figure 3-29*

- **LED Panel always stays on top:** This option makes the LED panel stay on top of other windows when the Media Man Tools window is minimized.
- **Synchronize the LED Panel with the LED Device on GV-Mobile DVR:** Not functional.
- **Enable disk full beep:** When the storage drive is full, the system sounds on. Note this function only works when speakers are connected to the GV-Mobile NVR System.

3. By default, only the hard disk drive D will be assigned to LED. If you want to re-assign the storage drive or assign other drives to LEDs, freely drag and drop the hard disk drive to the desired LED on the tree.
4. Click **OK** to apply the settings, and minimize the MediaMan Tools window to display the LED panel on the screen.
5. If you want to return to the MediaMan Tools window, right-click the LED panel and select **Switch to the setup window**.

---

**Note:**

1. Because the LEDs are designed to indicate the video and audio files are being written or read, it is not recommended to assign the storages that store log files to the LEDs.
2. If the storage that stores log files is assigned to a LED and its LED turns red, make sure the log files are not being written before you remove it. Otherwise, the log files might be lost during the removal.

---

## 3.8 Configuring the IP Address

GV-Mobile NVR System supports remote monitoring, control and configuration over a network connection. The following default IP addresses will automatically be assigned.

- **Connection 1: 192.168.0.200**
- **Connection 2: 192.168.0.201**
- **Default Subnet Mask: 255.255.252.0**

The local area connections listed correspond to the Ethernet ports as shown below:

*Figure 3-30*

To change the above default IP addresses, follow the steps below.

1. On the GV-Desktop, click the **Programs** button, and select **Control Panel**.

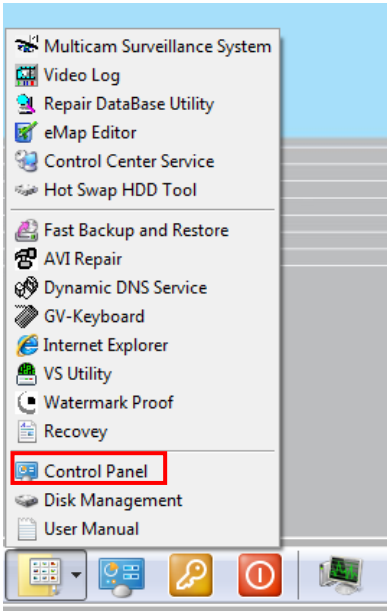



*Figure 3-31*

2. Type the ID and password. The default ID and password are "**0000**". The Control Panel window appears.
3. Under Network and Internet, click **View network status and tasks**.

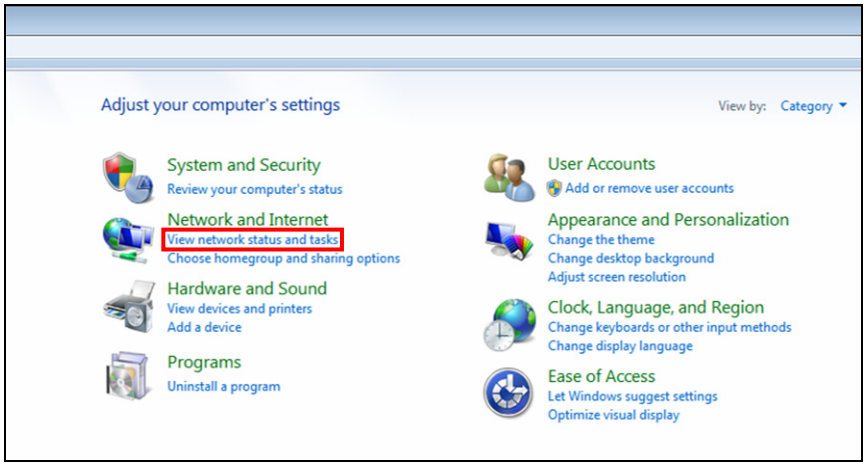



*Figure 3-32*

4. Under Connections, select the **Local Area Connection** you want to configure.

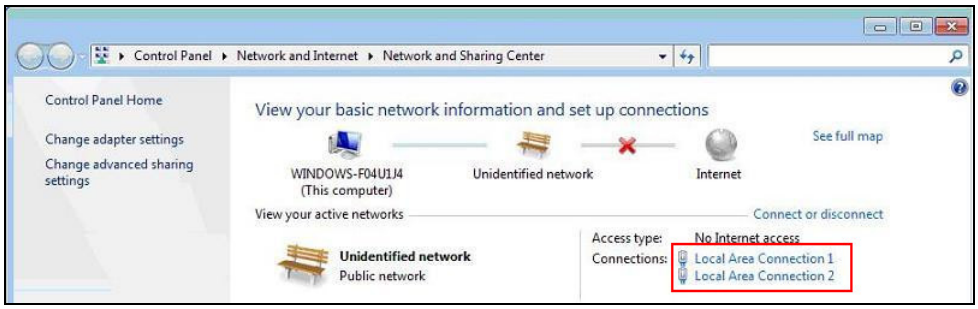



*Figure 3-33*

5. Select **Internet Protocol Version 4 (TCP/IPv4)**, and select **Properties**.

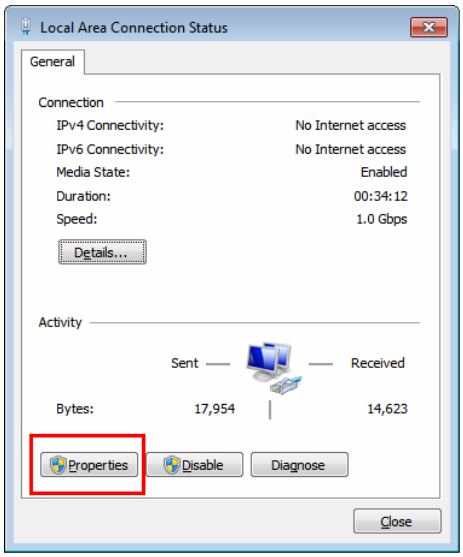



*Figure 3-34*

6. Select **Use the following IP address** and type the new IP information in the fields. Or select **Obtain an IP address automatically** to enable dynamic IP address.

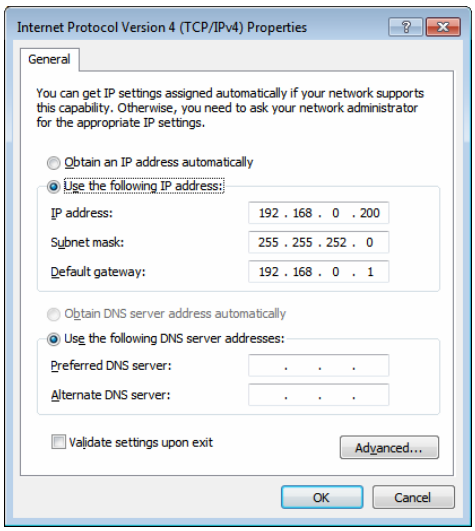

Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 200
Subnet mask:
255 . 255 . 252 . 0
Default gateway:
192 . 168 . 0 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

*Figure 3-35*

7. Click **OK** to finish the setting.

## 3.9 Exiting to Windows

GV-Mobile NVR System is protected by GV-Desktop that is limited to run the selected programs. If you need to exit to Windows desktop, follow these steps.

1. Exit the main screen to display the GV-Desktop screen.

*Figure 3-36*

2. Click the **Settings** button, and type the valid ID and password. The default ID and Password are "**0000**". The Settings dialog box appears.
3. Under Desktop Type, select **Windows** from the drop-down list, and click **OK**.
4. Click the **Log Off** button, and type the ID and Password to display the Windows desktop.

*Figure 3-37 The GV-Desktop*

## 3.10 Returning to GV-Desktop

To return to GV-Desktop, click the Windows **Start** button, point to **All Programs**, click **GV-NVR**, and click **Key Lock Utility**.

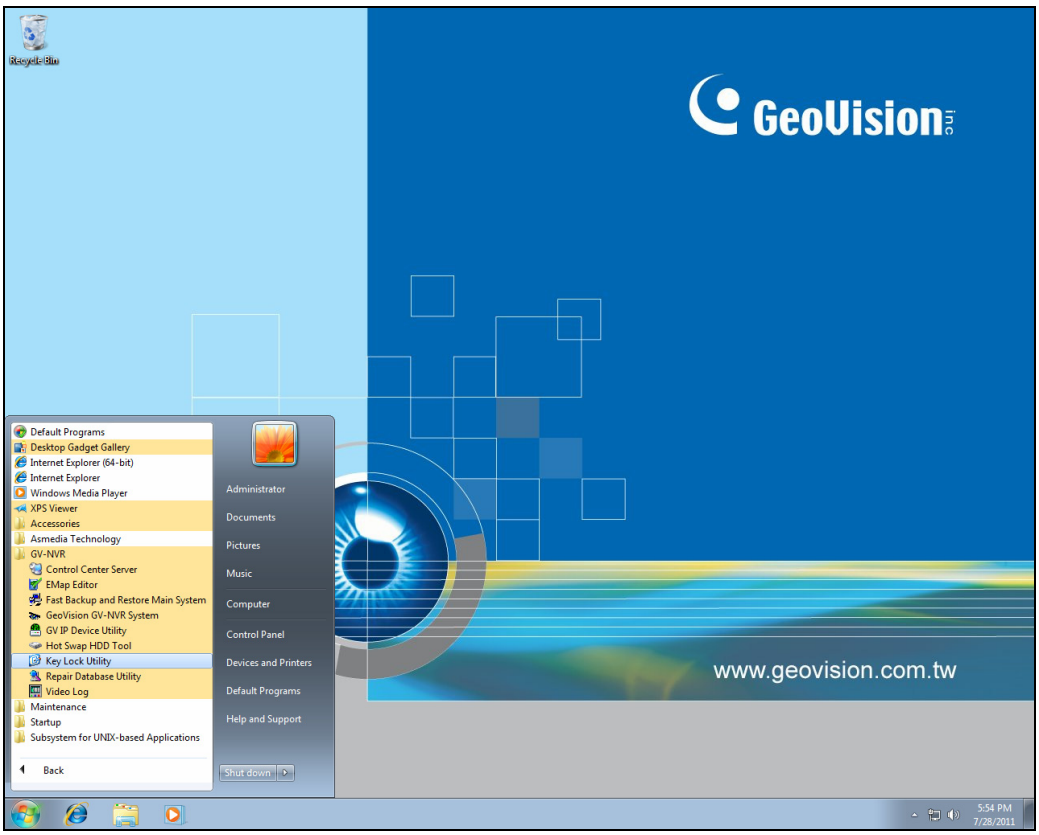



*Figure 3-38*

## 3.11 Setting Up Twin View Display

You can display live view and play back video in two separated monitors.

1. Follow Steps 1 and 2 in *3.8 Configuring the IP Address* to access the Control Panel window.
2. In the Control Panel window, click **Adjust Screen Resolution** under the Appearance and Personalization section. This dialog box appears.

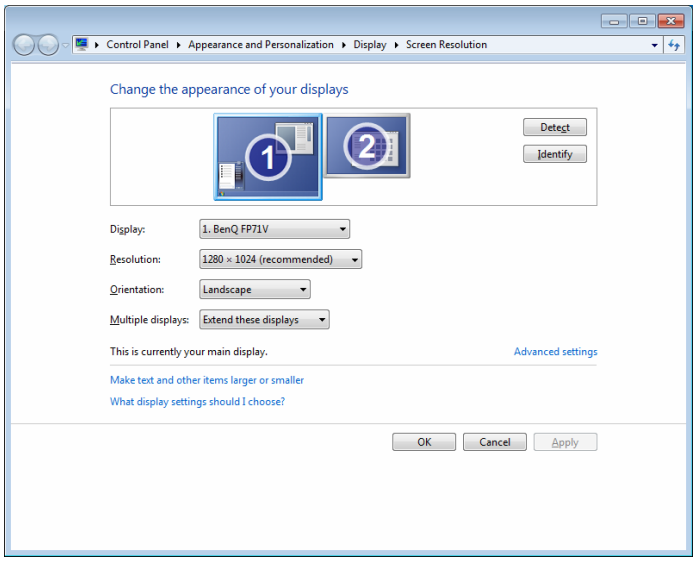



*Figure 3-39*

3. Click the **Display** list. If you do not see multiple monitors listed, check if your additional monitors are connected with the system properly.
4. Select the primary monitor from the list, and select **Make this my main display**.
5. Select additional monitors from the list, and select **Extend these displays** in the Multiple displays drop-down list.
6. Click **Identify**. Drag and drop the monitor icons to match the physical arrangement of your monitors.
7. Click **OK**.

8. Click the **Up** button on the toolbar, go to the system folder and locate **DMPOS.exe**.

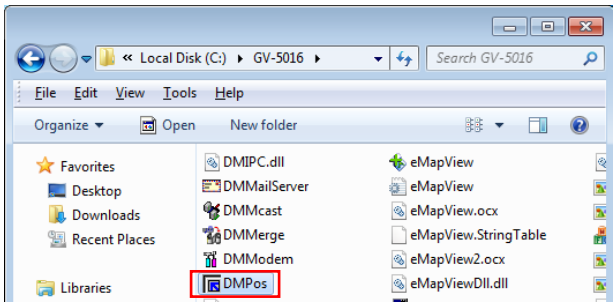



*Figure 3-40*

9. Double-click **DMPOS.exe**. The Set Application Function Position dialog box appears.

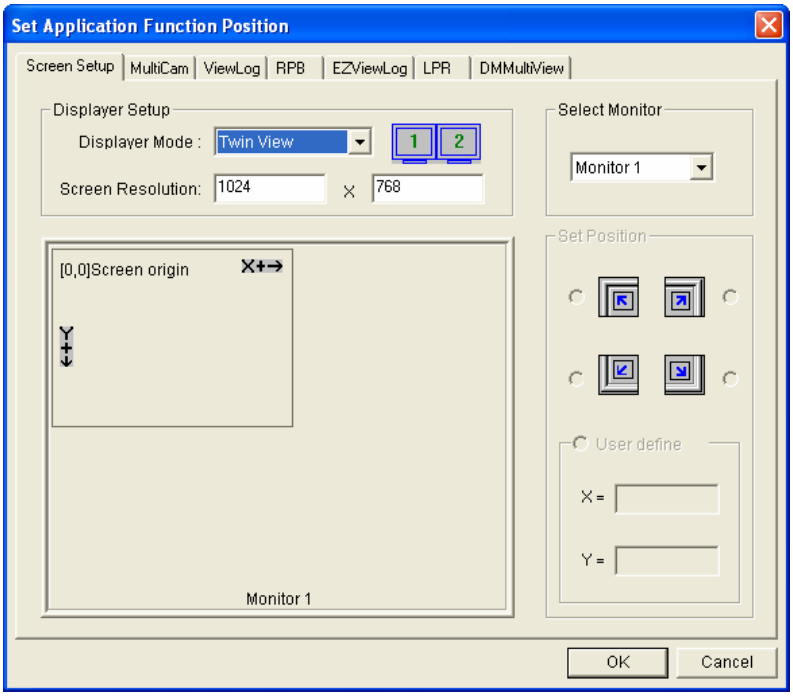



*Figure 3-41*

10. In the Screen Setup tab, select **TwinView** from the Displayer Mode drop-down list.
11. To define the live view monitor, in the MultiCam tab, select **Monitor 1** from the Select Monitor drop-down list.
12. To define the playback monitor, in the ViewLog tab, select **Monitor 2** from the Select Monitor drop-down list.
13. Click the **OK** button.
14. Exit and re-start the system. The live view should appear on monitor 1.
15. Click the **ViewLog** button on the main screen and select **Video/Audio Log** from the menu. The ViewLog player should appear on monitor 2.

## 3.12 Setting Up Digital Matrix

To display multiple channels through two monitors, Digital Matrix is thus introduced to provide a method.

The Digital Matrix includes these features:

- **Live view:** You can set different live views and screen divisions for each monitor.
- **Automatic channel scan:** You can set up to 16 scanned pages with different screen divisions and channels for each monitor.
- **Pop-up Alert:** You can be alerted by pop-up live videos when motion is detected or I/O devices are triggered.

### 3.12.1 Activating Two Monitors

Use Windows Display Property to activate multiple monitors.

1. Follow Steps 1 to 6 *in 3.11 Twin View Display* to configure the second monitor.
2. Start the GV-System, click the **Configure** button, click **Accessories**, select **Digital Matrix Setting**, select monitors from the **Display** list and select **Activate** for each monitor. All monitors must be activated one by one.
3. Click **Apply**. Your additional monitor should now display the channels seen on the primary monitor.

### 3.12.2 Setting Live View

You can set different live views and screen divisions for each monitor.

1. On the main screen, click the **Configure** button, click **Accessories**, and select **Digital Matrix Setting**. This dialog box appears.

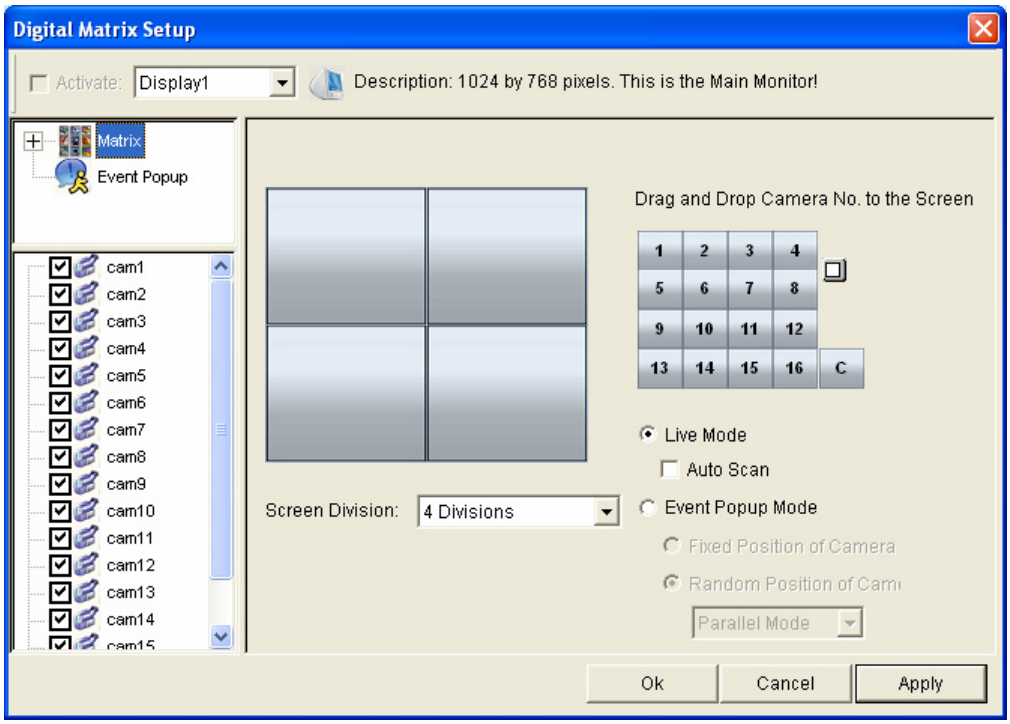



*Figure 3-42*

2. Use the **Display** list to select the monitor to be configured.
3. Select **Screen Division**.
4. Drag and drop the camera numbers to the desired positions on the divisions. To clear the assignment, drag and drop the “C” icon to that position.
5. Select **Live Mode**.
6. Repeat above steps to configure other monitors.
7. Click **OK** to apply the settings.

### 3.12.3 Setting Scanned Pages

You can set up to 16 scanned pages with different screen divisions and channels for each monitor.

1. Use the **Display** list to select the monitor to be configured.
2. In the upper-left column, expand the **Matrix** folder tree, and click **Page 1**. This page appears.

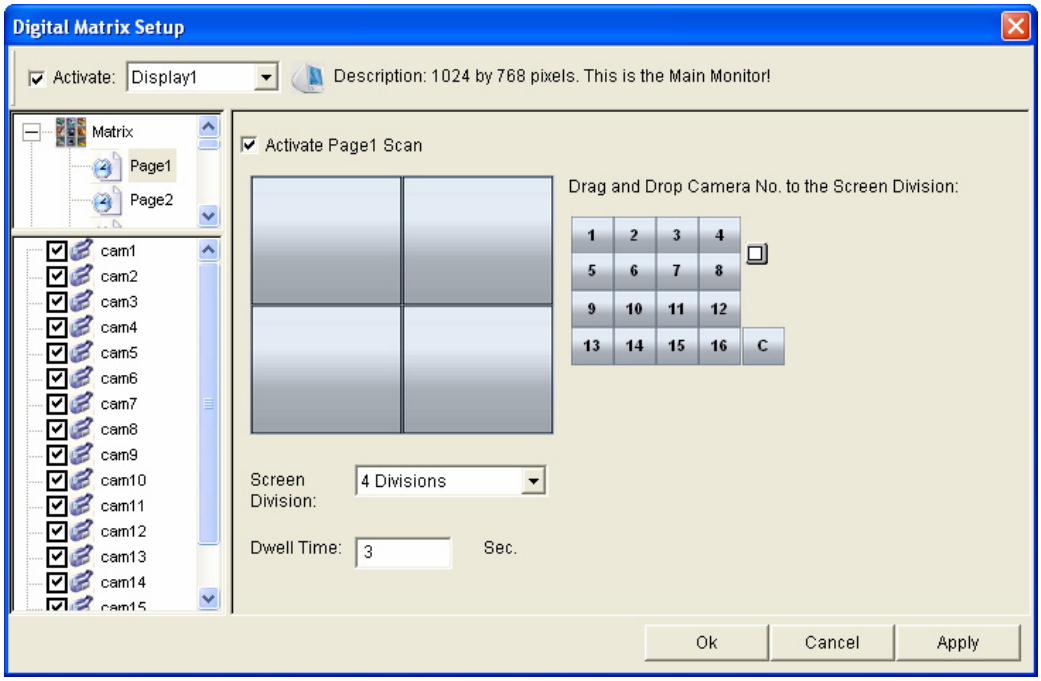



*Figure 3-43*

3. Select **Activate Page 1 Scan**.
4. Select **Screen Division**.
5. Drag and drop the camera numbers to the desired positions on the divisions. To clear the assignment, drag and drop the “C” icon to that position.
6. Specify **Dwell Time** for how long this scanned page remains on the monitor.
7. Repeat Steps 2 to 5 to configure more scanned pages for the specific monitor.
8. Repeat Steps 1 to 7 to configure scanned pages for the second monitor.
9. In the upper-left column, click the **Matrix** icon and return to Figure 3-42.
10. Select **Auto Scan**.
11. Click **OK** to start scanning among pages.

### 3.12.4 Setting Pop-up Alert

You can be alerted by pop-up live videos when motion is detected or I/O devices are triggered.

1. Use the **Display** list to select the monitor to be configured.
2. In the upper-left column, click **Event Popup**. This page appears.

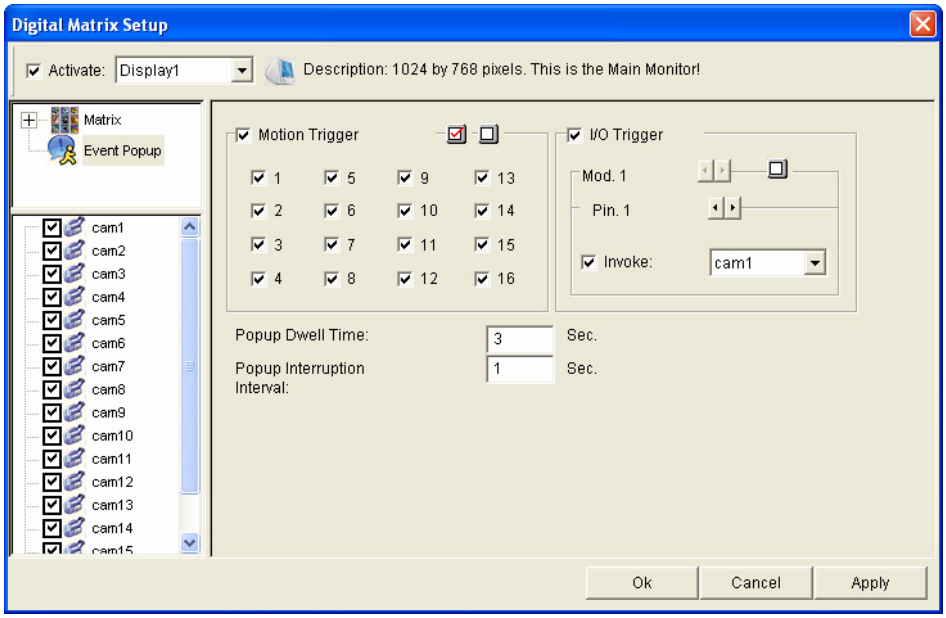



*Figure 3-44*

- **Motion Trigger:** The live video of selected cameras pops up when motion is detected.
- **I/O Trigger:** The live video of assigned camera pops up when the selected input device is triggered.
- **Popup Dwell Time:** Specify the amount of time that a pop-up live video remains in the foreground.
- **Popup Interruption Interval:** Specify the interval between camera pop-ups. This option is useful when several cameras are activated for pop-up alert at the same time.

3. Use the **Display** list to select other monitors for setup.
4. After above settings, click the **Matrix** icon and return to Figure 3-42.
5. Select **Event Popup Mode**. Then select **Fixed Position of Camera** or **Random Position of Camera**. For these two options, see *3.12.4.1 Setting Pop-up Positions*.
6. Click **OK**.
7. Start monitoring. When motion is detected or the input device is triggered, the live video will pop up for alert.

### 3.12.4.1 Setting Pop-up Positions

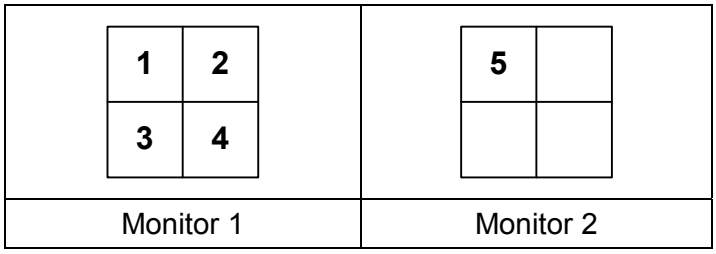
When you select **Random Position of Camera**, you can decide the positions for pop-up cameras.

- **Fixed Position of Camera:** The cameras pop up in their assigned positions. To assign positions, select **Screen Division**. Then drag and drop the cameras number to the desired potions on the divisions.
- **Random Position of Camera:** The positions of pop-up cameras are based on the sequence order of triggers. There are two modes for this position:

1. **Cascade Mode:** This mode can avoid the same cameras popping up on different monitors. This is suggested to be used when multiple monitors are placed close to each other.

   Example:

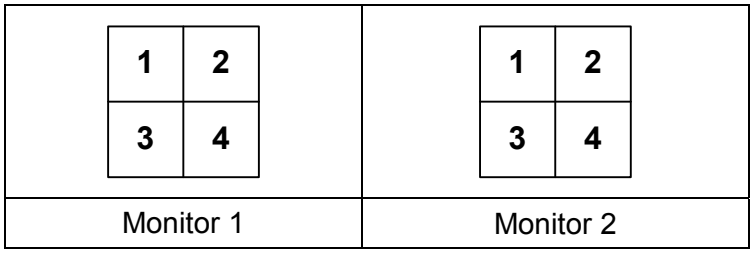
   Camera 1, Camera 2, Camera 3, Camera 4 and Camera 5 are assigned for pop-up alert on both Monitor 1 and Monitor 2. Monitor 1 is set at 4 screen divisions. When the five cameras are triggered at same time, the first 4 cameras show up on Monitor 1 and the 5th on Monitor 2.




2. **Parallel Mode:** This mode allows the same cameras simultaneously pop up on different monitors. This is suggested to be used when multiple monitors are placed in separate rooms.

   Example:

   Camera 1, Camera 2, Camera 3 and Camera 4 are assigned for pop-up alert on both Monitor 1 and Monitor 2. When the four cameras are triggered at the same time, they will show up simultaneously on both Monitor 1 and Monitor 2.



### 3.12.5 Setting Live View with Pop-up Alert

You can set a different live view mode with pop-up alert together for each monitor. When alert events occur, the live video of the associated camera will pop up on the assigned monitor to replace its live view mode.

1. To configure live view mode, follow the instructions in *3.12.2 Setting Live View*.
2. To configure pop-up alert, in the upper left column, click **Event Popup**. Figure 3-44 appears.
3. Configure **Motion Trigger**, **I/O Trigger**, **Popup Dwell Time** and **Popup Interruption Interval** for each monitor. For details, see *3.12.4 Setting Pop-up Alert.*
4. Click the **Matrix** icon and return to Figure 3-42. Ensure the **Live Mode** option is selected.
5. Click **OK**. The live view mode you configured for each monitor is displayed.
6. Start monitoring. When alert events occur, the associated camera will pop up on the desired monitor.

## 3.13 Updating GV-Mobile NVR System

If you like to update your GV-Mobile NVR System, contact your dealer for more information.

Before contacting your dealer, you may check software update news at our website: http://www.geovision.com.tw

# Chapter 4 System Restoration

You can restore preinstalled files once they are damaged by running the recovery from the hidden partition. To restore the operating system and all preinstalled software, follow the steps below.

---

**Note:** After recovery, you need to re-install all settings and passwords. But the recovery will not delete your recording files saved on the GV-Mobile NVR System since it only reformats the partition C and all of your files are still stored on other partitions.

---

1. On the GV-Desktop, click the **Program** button and select **Recovery**. The system will run this command by itself.

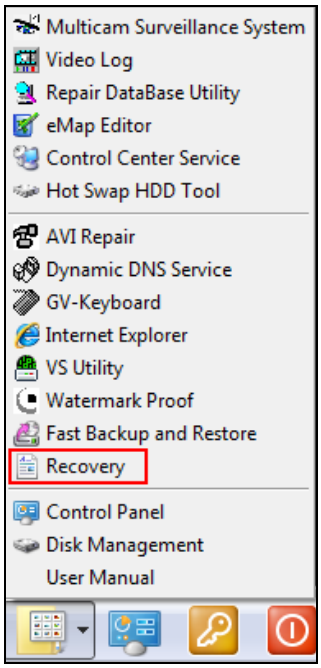



*Figure 4-1*

2. Restart the GV-Mobile NVR System.
3. Press **F11** button several times to avoid accessing the system.

4. When the below screen appears, press the **Recovery** button.

*Figure 4-2*

5. When the restoring process is completed, the screen will automatically show the GV-Desktop, and the system will restore the default values.

# Chapter 5 Health Analysis

GeoVision offers health analysis to GV-Mobile NVR System. The service is intended to give diagnosis for early and immediate detection of problems.

It is recommended to have the health analysis during the first week after you install the GV-Mobile NVR, and then have the checkup every three months. It will take 5 working days for response.

Please prepare the following data for analysis, and send to dvrsystem@geovision.com.tw

- **System Settings**
- **System Log**
- **Information of your computer system (Processor; Drives; Voltage, Temperature and Fans)**

## 5.1 System Settings

Please back up your system configurations using the **Fast Backup and Restore** application.

1. Run **Fast Backup & Restore Main System** from the Start menu.

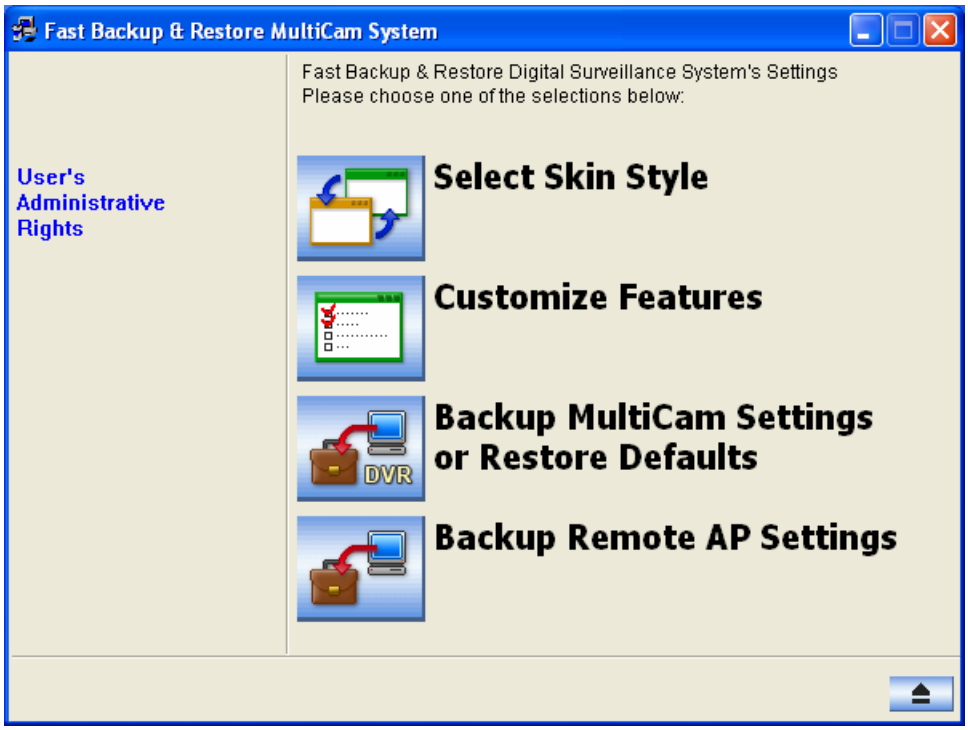

Fast Backup & Restore MultiCam System
Fast Backup & Restore Digital Surveillance System's Settings
Please choose one of the selections below:
User's Administrative Rights
Select Skin Style
Customize Features
DVR
Backup MultiCam Settings or Restore Defaults
Backup Remote AP Settings

*Figure 5-1*

2. Select **Backup MultiCam Settings or Restore Defaults**, and select **Backup Current System**. This dialog box appears.

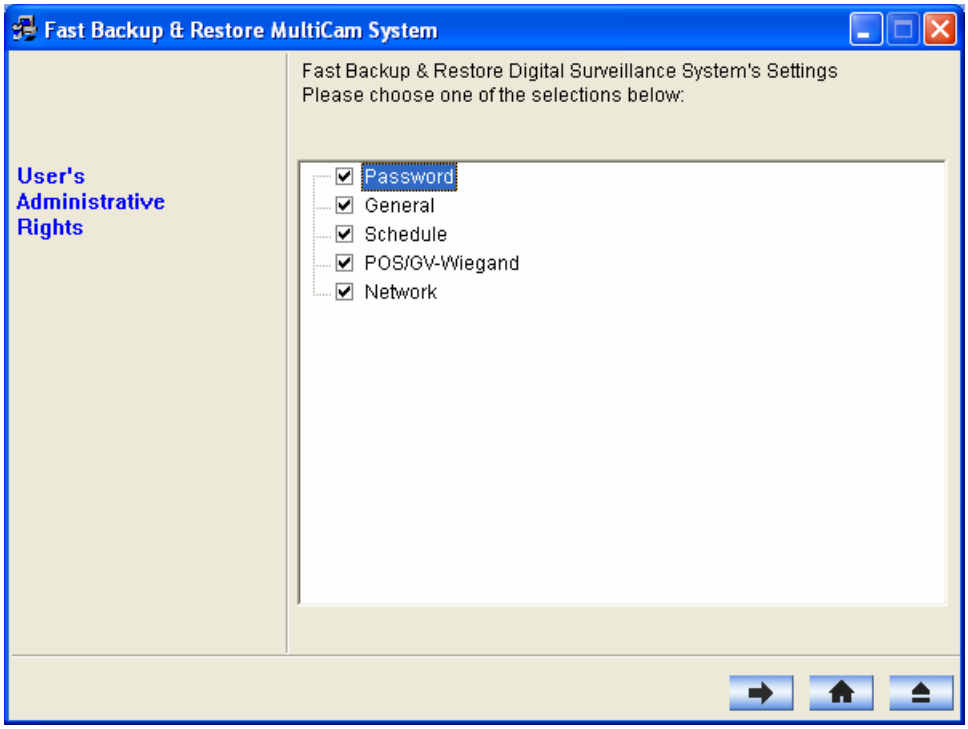



*Figure 5-2*

3. Press the **Next Step** button to back up all your system settings. The Save As dialog box appears.
4. Select the destination drive to store the backup file. When the backup is complete, this message "*Successfully Backup MultiCam System Settings*" will appear.

## 5.2 System Log

Please provide the **sys*.mdb** files of system log. The files by default are saved at **C:\GV folder\database**. If you have modified the default location, you can check the path by the following steps:

1. Click the **Configure** button on the Main System, select **System Configure**, and then select **System Log Setting**. This dialog box appears.

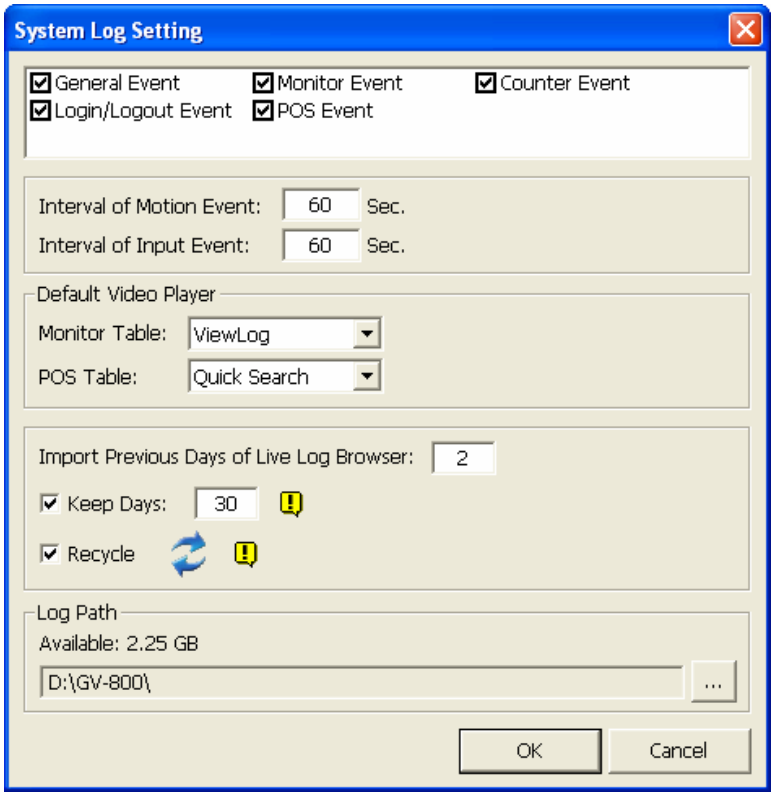



*Figure 5-3*

2. The location of your system log is listed after **Log Path**.

## 5.3 Information of Your Computer System

To get the information of your computer system, please follow the steps below to install the free software PC WIZARD. By using the software, the following computer information can be easily collected and saved for analysis:

- **Processor:** includes Type, Frequency, Data Cache L1, Trace Cache L1, Cache L2, Voltage, Processor Temperature, FPU Coprocessor.
- **Drives:** includes Number of Hard Disk, Number of Drive, Total Size and Free Space of Drive.
- **Voltage, Temperature and Fans:** includes Monitoring Chip, Voltage CPU, Chassis Fan, Processor Temperature, Mainboard Temperature, Hard Disk Temperature.

1. Download and install **PC WIZARD** from http://www.cpuid.com/pcwizard.php .
2. After installation, run the program.
3. Right-click the **Processor** icon and click **Save as**.

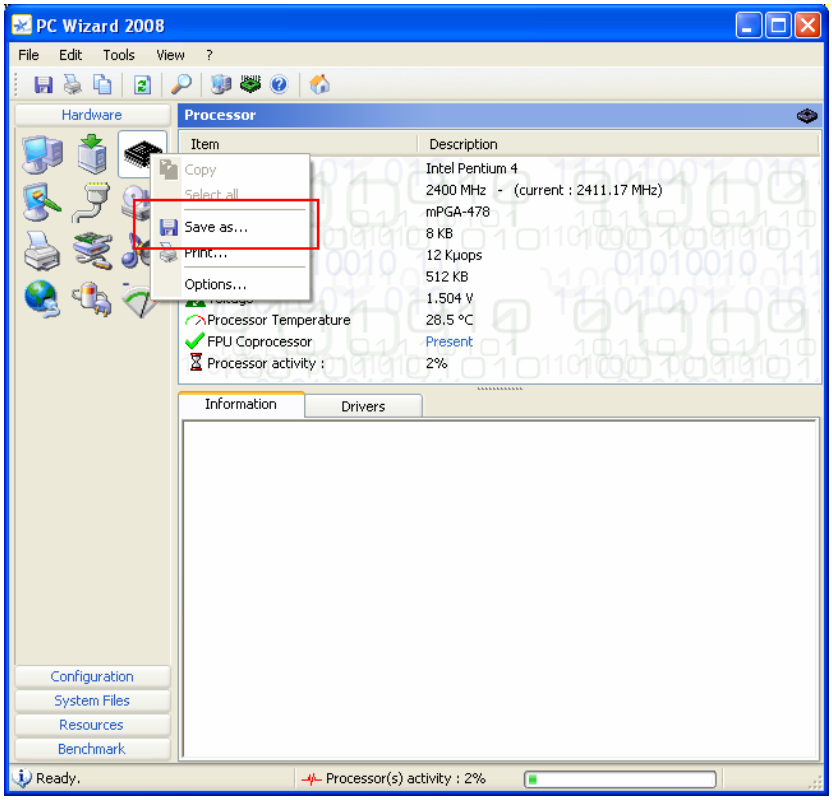



*Figure 5-4*

4. In the Save As dialog box, select **Format HTML** and click **OK**.

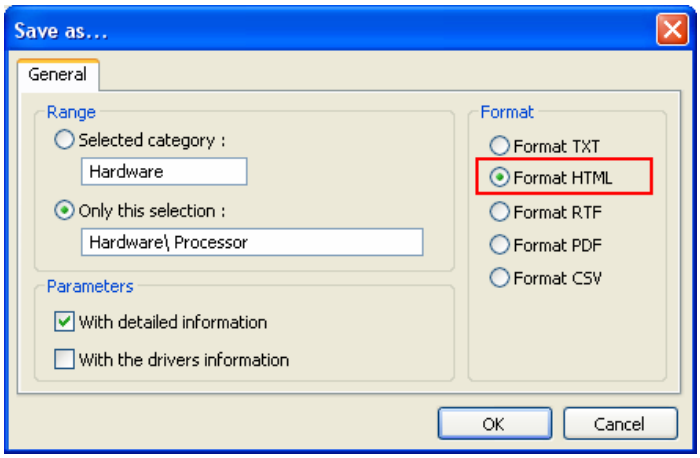



*Figure 5-5*

5. Select the Save location, type the file name, and then click **Save** to save the Processor information as HTML file.
6. Repeat Steps 3-5 to save the **Drives** information as HTML file.
7. To save the **Voltage, Temperature and Fans** information , please follow these steps:
   A. Click the **Voltage, Temperature and Fans** icon. The related data is displayed at the right window.
   B. Click the first item **Monitoring Chip**.
   C. Click **Edit** on the menu bar and click **Select All** to highlight all the contents.
   D. Click **Edit** on the menu bar and select **Copy**.
   E. Open a Notepad. Paste and save the information to TXT file.

## 5.4 Health Analysis Form

Please send the related data for analysis along with this Health Analysis Form to dvrsystem@geovision.com.tw.

| Health Analysis of GV-Mobile NVR System | |
|---|---|
| **Contact Person:** | **Title:** |
| **Company Name:** | |
| **Telephone: (O)** | **(H)** |
| **Fax:** | |
| **E-Mail:** | |
| **Model:** | |
| **Bar Code:** | |

## 5.5 Check List

Read this check list before submitting the health analysis request:

- System Settings- **EXE file**
- System Log- **sys*.mdb**
- Computer System- Processor information of **HTML file**
- Computer System- Drives information of **HTML file**
- Computer System- Voltage, Temperature and Fans information of **TXT file**
- Health Analysis Form

# Chapter 6 Troubleshooting

## GV-Mobile NVR storage drive becomes corrupted.

If you are experiencing file system corruption problems, such as lost clusters, cross-linked files or invalid files or directories, try these steps:

1. Use the **HD Tune** utility to scan the storage drive for errors. Follow these steps:
   A. Download and install **HD Tune** from http://www.hdtune.com/
   B. Click the **Error Scan** tab and click **Start** to scan. Any found defects will be shown as red blocks (see Figure 5-1).

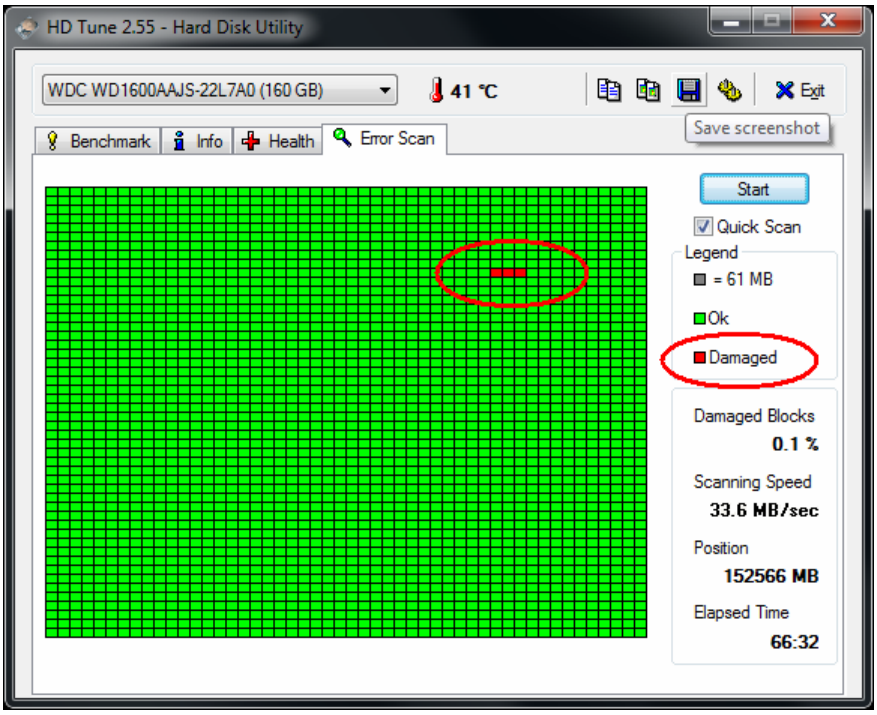



*Figure 6-1*

   C. If your storage drive is damaged, replace a new one.

2. If the HD Tune utility does not find any defects, use the Windows built-in utility to attempt to fix the errors. Follow these steps:

   A. On the GV-Desktop, click the **Programs** button, and select **Disk Management**. See Figure 3-16.

   B. Right-click the desired storage drive and select **Properties** from the file menu to display the Properties window.

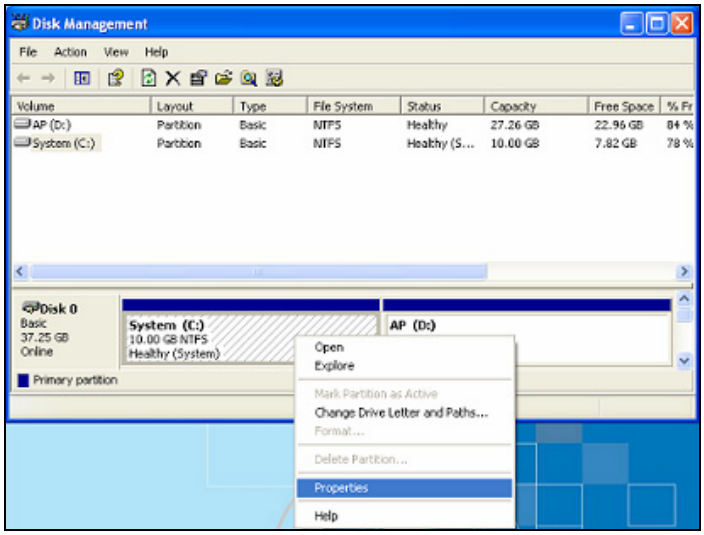



*Figure 6-2*

   C. Click the **Tools** tab in the upper portion of the window.

   D. Under Error-checking, click the **Check Now** button.

*Figure 6-3*

   E. Select **Automatically fix file system errors** and **Scan for and attempt recovery of bad sectors**.

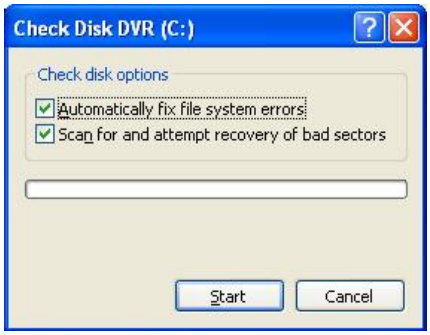



*Figure 6-4*

   F. Click **Start**.

3. If the Windows hard disk utility still cannot fix the problem in Partition C, try rebuilding the operating system and GV-System Software by running the recovery from the hidden partition. Refer to *Chapter 4 System Restoration*.

### Live video is not displayed smoothly.

If some of live videos are not displayed smoothly, check the following status:

1. Check the bandwidth status of the network that is connected to the GV-Mobile NVR System.
2. Check if several users are accessing the Web interface of the GV-IP camera. Try to close some of open Web interfaces.

### Unable to locate all the GV-IP cameras by using the IP Device Utility.

If you can not locate all the GV-IP cameras by using the IP Device Utility, try the following instructions:

1. Ensure all the GV-IP cameras are connected to the same LAN with the GV-Mobile NVR System and check the network connectivity.
2. Ensure you have powered on all the GV-IP cameras.
3. Click the Search button of the IP Device Utility again to detect the GV-IP cameras.

### Black images are displayed.

1. Check the IP cameras and make sure they are functioning well.
2. Check the GV-Mobile NVR System's connection over network.

### How can I find more help?

Visit our website at http://www.geovision.com.tw/english/4_1.asp

Write us at dvrsystem@geovision.com.tw

# Specifications

**Hardware**

| Model | | | GV-MNVR1000 | GV-MNVR2100 |
|---|---|---|---|---|
| **System** | | | | |
| CPU | | | Intel Atom Processor | Intel Core i3 Processor |
| RAM | | | 2 GB Single Channel | 4 GB Dual Channels |
| OS | | | 64-bit Windows Embedded Standard 7 SP1 | |
| Internal Storage | | | 32 GB (CFast Card) | |
| No. of Drive Bay | | | 1 (2.5” HDD / SSD) | 2 (2.5” HDD / SSD) |
| Connector | Ethernet | | RJ-45, 10 / 100 / 1000 Mbps x 2 | |
| | Video Output | | VGA and DisplayPort | |
| | USB 2.0 | | Rear: 2 ports | Front: 1 port; Rear: 1 port |
| | USB 3.0 | | Front: 1 port | Front: 1 port; Rear: 1 port |
| | Power | | DC 10 ~ 35V (ACC, Vehicle Ignition) | |
| | Antenna | 3G / 4G | Front: 4 ports | Front: 3 ports; Rear: 3 ports |
| | | GPS | Rear: 1 port | Rear: 1 port |
| Power Adapter (Optional) | | | Input: AC 100 ~ 240V (50 ~ 60 Hz)<br>Output: DC 24V, 5A | |
| Fan | | | N/A | |
| **Environment** | | | | |
| Operating Temp. | HDD | | 0°C ~ 60°C (32°F ~ 140°F) | |
| | SSD | | -30°C ~ 70°C<br>(-22°F ~ 158°F) | -30°C ~ 60°C<br>(-22°F ~ 140°F) |
| Humidity | | | 10 ~ 90% RH (non-condensing) | |
| **Physical** | | | | |
| Color | | | Silver | |
| LED Indicator | | | 4 ( HDD, WWAN, Power and WLAN) | |

| Physical | | |
|---|---|---|
| Dimensions (W x H x D) | 260 x 50 x 176 mm<br>(10.24 x 1.97 x 6.93”) | 260 x 79.5 x 206 mm<br>(10.24 x 3.13 x 8.11”) |
| Net Weight | 2.1 kg / 4.63 lb<br>(± 1 kg / 2.2 lb) | 2.5 kg / 5.51 lb<br>(± 1 kg / 2.2 lb) |
| Operating Shock | 20 G | |
| Operating Vibration | 1.5 G @ 5 ~ 500 Hz (HDD)<br>2 G @ 5 ~ 500 Hz (SSD) | |
| Sensor and Alarm | | |
| Inputs | 4 / 8 / 16 ports (optional GV-I/O Box required) | |
| Outputs | 4 / 8 / 16 ports (optional GV-I/O Box required) | |

**Software**

| Video and Audio | | | | |
|---|---|---|---|---|
| Video Standard | | | NTSC, PAL | |
| Video Codec | | | MJPEG / MPEG4 / H.264 | |
| Audio Codec | | | 32 kHz / 16 bit | |
| Video Stream | | | Dual Streams from GeoVision IP Cameras | Dual Streams from 3rd-party IP Cameras |
| Video Input | GV-MNVR1000 | 1 MP | 20 channels | 20 channels |
| | | 2 MP | 17 channels | 17 channels |
| | | 3 MP | 24 channels | 24 channels |
| | | 5 MP | 16 channels | 16 channels |
| | GV-MNVR2100 | 1 MP | 31 channels | 31 channels |
| | | 2 MP | 25 channels | 25 channels |
| | | 3 MP | 32 channels | 32 channels |
| | | 5 MP | 32 channels | 32 channels |
| Audio Input | GV-MNVR1000 | | Up to 24 channels | Up to 24 channels |
| | GV-MNVR2100 | | Up to 32 channels | Up to 32 channels |

**Note:** It is required to enable the dual-stream function on GeoVision and third-party IP cameras to have the maximum number of channels supported. For single streaming third-party IP cameras, please see "Maximum Channels and Frame Rate Supported" later in this manual.

| | | |
|---|---|---|
| **Video and Audio** | | |
| **Live View and Playback** | | |
| **Image Control** | | Contrast / Brightness / Saturation / Hue |
| **Recording Mode** | | Round the Clock / Motion Detection / Sensor Detection / Pre & Post Recording / Schedule Recording |
| **Pre Recording** | | 1 ~ 45 min. |
| **Instant Playback** | | 10 sec. / 30 sec. / 1 min. / 5 min. |
| **Watermark** | | Supported |
| **Search and Backup** | | |
| **Search Method** | | Date / Time / Camera / Event type |
| **Backup Type** | | DVD+R (DL) / DVD-R (DL) / DVD+R / DVD+RW / DVD-R / DVD-RW |
| **Note:** For backup function, you need to connect an external USB DVD/CD burner. | | |
| **Remote Monitoring** | | |
| **Monitoring Environment** | | Web browser (IE, Chrome, Firefox and Safari)<br>Mobile device (iOS and Android) |
| **Live View** | **GV-MNVR1000** | Max. 24-channel multi views |
| | **GV-MNVR2100** | Max. 32-channel multi views |
| **Network Type** | | LAN, WAN, Internet |
| **System Monitoring and Recovery** | | |
| **Power Restoration** | | Automatic restart after power outage |
| **Monitoring** | | Software watchdog |
| **Recovery** | | Automatic system rebuild from internal hard disk |
| **Certification** | | |
| **Type** | | CE, FCC, E-Mark (E13), EN50155 (coming) |

| Language | |
|---|---|
| Type | Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Italian / Japanese / Lithuanian / Norwegian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish |
| **Software License** | |
| Free License | 24 / 32 channels from GV-IP devices |
| Maximum License | 24 / 32 channels from third-party IP devices |
| Increment for Each License | 1 to 24 / 32 third-party IP cameras at an increment of 2 |
| Dongle Type | External |

Note: All specifications are subject to change without notice.

# Appendix

## Supported IP Devices

This list provides the supported IP device brands. For detailed information on the supported IP devices, refer to Supported IP Camera List on GeoVision's website: http://www.geovision.com.tw/english/4_21.asp

| |
|---|
| GeoVision |
| ACTi |
| Arecont Vision |
| AXIS |
| Bosch |
| Canon |
| CNB |
| D-Link |
| Etrovision |
| Hikvision |
| HUNT |
| IQinVision |
| JVC |
| LG |
| MOBOTIX |
| Panasonic |
| Pelco |
| Samsung |
| Sanyo |
| SONY |
| UDP |
| Verint |
| VIVOTEK |

# Warranty Policy

GeoVision, Inc. (“GeoVision”) provides types of Limited Warranty for products. Please see **Limited Warranty Table** on main page of official website (www.geovision.com.tw) for detail information.

All aforementioned products, **EXCLUDE ALL SOFTWARE AND SOME PACKAGED ACCESSORIES LISTED IN LIMITED WARRANTY TABLE**, (hereinafter called “Products”) will be free from defects in materials/workmanship during the terms of these Limited Warranties (“Limited Warranties”) from the date of purchase. These Limited Warranties parts and labor warranty are applicable to Products purchased via authorized distribution and sales channels.

If a defect arises and a valid claim is received by GeoVision within Limited Warranties Period, at its option, GeoVision will (1) repair Products at no charge, using new or refurbished replacement parts, or (2) exchange Products with a Product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original Products.

GeoVision warrants replacement parts or repairs for thirty (30) days from the date of GeoVision shipment or for the remainder of Limited Warranties Period, whichever provides longer coverage for you. When a Product or part is exchanged, any replacement item becomes your property and the replaced item becomes GeoVision’s property.

It is customer’s sole responsibility and requirement to prove these Products are under warranty (by submit your sales invoice and bar code), otherwise GeoVision will determine these Products’ warranties period at its option. GeoVision reserves the right, at its sole discretion and any time, to modify and adjust the scope and content of Products and its warranty without prior notice, however, any modification and adjustment thereafter will not affect or interrupt any rights belonging to Products you purchased already.

**LIMITATIONS OF WARRANTIES**

Limited Warranties apply only to Products manufactured by or for GeoVision that can be identified by the "GeoVision" trademark, trade name, or logo affixed to them. Limited Warranties do not apply to any non-GeoVision products including counterfeited products. GeoVision is not liable for any damage to or loss of any profit, programs, data, or other information stored on any media, or any non-GeoVision products or part not covered by these warranties. Recovery and reinstallation of system and application software and user data are not covered under Limited Warranties. Limited Warranties do not apply if:

a) Products have been subjected to abnormal use, improper storage, unauthorized modifications, unauthorized repair, misuse, neglect, abuse, accident, alternation, removal

of any stickers or labels on the hardware, improper hardware/software installations, or other acts that are not the faults of GeoVision, including damage caused by shipping;

b) Products have been damaged from exposure under circumstances which is over weatherproof specification of the product, an Act of God, or improper use of any electrical source, or the connection to other products not recommended for interconnection by GeoVision;
c) Products have defects or damage caused due to computer virus attack, internet or technical issues;
d) Products serial number have been removed, defaced or altered; or
e) Products have been sold by an unauthorized distributor or retailer.
f) The GV system case has been opened.
g) Products have been interoperated with any non-GeoVision products which GeoVision does not approve the compatibility.

**DISCLAIMER OF WARRANTIES**

Except as specified in these warranties, all express or implied conditions, representations, and warranties including, without limitation, any implied warranties or condition of merchantability, fitness for a particular purpose, non-infringement, satisfactory quality, non-interference, accuracy of informational content, or arising from a course of dealing, law, or trade practice, are hereby excluded to the extent allowed by applicable law and are expressly disclaimed by GeoVision. To the extent implied warranties cannot be excluded, such warranties are limited in duration to the express warranties period. Because some states or jurisdictions do not allow limitations on how long implied warranties lasts, the above limitation may not apply. These warranties give customers specific legal rights, and customer may also have other rights which vary from jurisdiction to jurisdiction. This disclaimer and exclusion shall apply even if the express warranties set forth above fails of its essential purpose.

GeoVision makes no warranties and liabilities, express or implied, with respect to non-GeoVision products or their interoperation with the products and disclaim any implied warranties of merchantability, compatibility, fitness for a particular use, or interoperation between products and non-GeoVision products. GeoVision shall not be liable for including but not limited to any data lost, loss and damage, direct or indirect, for any interoperation between the products and non-GeoVision products.

**LIMITATION OF LIABILITY**

Regardless whether any remedy set forth herein fails of its essential purpose or otherwise, in no event will GeoVision or its suppliers be liable for any lost revenue, profit or lost or damaged data, business interruption, loss of capital, or for special, indirect, consequential, incidental, or

punitive damages however caused and regardless of the theory of liability or whether arising out of the use or inability to use the GeoVision Products or otherwise and even if GeoVision has been advised of the possibility of such damages. In no event shall GeoVision's liability to customer, whether in contract, tort (including negligence), breach of warranty, or otherwise, exceed the price paid by customer for the Software that gave rise to the claim or if the Software is part of another Products, the price paid for such other Products. Because some states or jurisdictions do not allow limitation or exclusion of consequential or incidental damages, the above limitation may not apply to you. In no event shall GeoVision's total liability to you for all damages (other than as may be required by applicable law in cases involving personal injury) exceed the amount of two hundred dollars (U.S. $200.00). The foregoing limitations will apply even if the above stated remedy fails of its essential purpose. Customer agrees that the limitations of liability and disclaimers set forth herein will apply regardless of whether customer has accepted any other Products or service delivered by GeoVision. Customer acknowledges and agrees that GeoVision has set its prices in reliance upon the disclaimers of warranties and the limitations of liability set forth herein, that the same reflect an allocation of risk between the parties, and that the same form an essential basis of the bargain between the parties.

These Warranties shall be governed by and construed in accordance with the laws of Taiwan, Republic of China and United State, without reference to or application of choice of law rules or principles. The United Nations Convention on the International Sale of Goods shall not apply. If any portion hereof is found to be void or unenforceable, the remaining provisions shall remain in full force and effect.

**FOR AUSTRALIA ONLY:**

Our products come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the products repaired or replaced if the products fail to be of acceptable quality and the failure does not amount to a major failure. Please visit www.accc.gov.au for more information. GeoVision Inc. 9F, No.246, Sec.1, Neihu Rd., Neihu District Taipei 114, Taiwan R.O.C. Tel: 886-2-8797-8376 Email: **support@geovision.com.tw**

**GeoVision Inc. Warranty Policy last updated on August 14, 2013.**

# Warranty Requirements

To validate your purchase, you shall complete the online Product Registration **within 30 days from the date of purchase** at http://www.geovision.com.tw/english/4_6.asp. Or click **GeoVision Online Registration** in My Favorite for a direct link.

If you fail to complete the Product Registration, the warranty period will start **from the date of shipment.**

## Before you return the product

Some problems you experience may be related to software or the operating system. It is important to investigate other sources of assistance first. Before returning the product, try the following:

1. Review troubleshooting sections in the documentation for software and peripheral devices.
2. Try rebuilding the operating system and GV-System by using the Recovery DVD.
3. Consult your dealer. They are your best sources for current information and support. Or you can call or email GeoVision offshore offices for assistance.

   When you call or e-mail, please inform us the following:

   - Model name
   - Bar Code
   - Details of the defect or problem
   - Attempted solutions
   - Your contact information
   - Reseller's contact information

4. If you find it is the software problem, please check our website or your dealer for software updates.

## Obtaining Warranty Service

If you are still unable to solve the problem and suspect that it is hardware related, follow these:

1. Send an e-mail to GeoVision to start Return Merchandise Authorization (RMA) process.

   E-Mail: sales@geovision.com.tw or dvrsystem@geovision.com.tw
2. Securely pack the product in its original carton using the original packing material, or in equivalent packaging.
3. The product shall be returned to **GeoVision, Taiwan** at your expense for shipping and insurance costs.

**BEFORE YOU DELIVER YOUR GV-MOBILE NVR SYSTEM FOR WARRANTY SERVICE, IT IS YOUR RESPONSIBILITY TO BACK UP YOUR DATA. YOU WILL BE RESPONSIBLE FOR REINSTALLING ALL DATA, SETTINGS AND PASSWORDS. DATA RECOVERY IS NOT INCLUDED IN THE WARRANTY SERVICE AND GEOVISION IS NOT RESPONSIBLE FOR DATA THAT MAY BE LOST OR DAMAGED DURING TRANSIT OR A REPAIR.**

# Warranty Form

Thank you for purchasing the GV-Mobile NVR System. To help us validate your purchase and better serve you in the future, please go to http://www.geovision.com.tw/english/4_6.asp or click **GeoVision Online Registration** in My Favorite for a direct link to register online **within 30 days from the date of purchase**. Please keep this copy for your records.

| | |
|---|---|
| **Name: First (given)** | **Surname (family name)** |
| **Company Name (only if the product is owned by company):** | |
| **Mailing Address:** | |
| **City/Town:** | **Province/State:** |
| **Country:** | **Postal Code:** |
| **Telephone: (O)** | **(H)** |
| **Fax:** | |
| **E-Mail:** | |
| **Date of Purchase: (e.g. 16-APR-2012)** | |

**Product:** Please check the model and its items you purchased.

**Model**

**☐GV–MNVR1000 System** **☐GV–MNVR2100 System**

**The system with third-party IP devices**

| | | | |
|---|---|---|---|
| **☐ 1 Channel** | **☐ 2 Channels** | **☐ 4 Channels** | **☐ 6 Channels** |
| **☐ 8 Channels** | **☐ 10 Channels** | **☐ 12 Channels** | **☐ 14 Channels** |
| **☐ 16 Channels** | **☐ 18 Channels** | **☐ 20 Channels** | **☐ 22 Channels** |
| **☐ 24 Channels** | **☐ 26 Channels** | **☐ 28 Channels** | **☐ 30 Channels** |
| **☐ 32 Channels** | | | |

| |
|---|
| **Bar Code:** |
| **Shipment Date:** |

**GeoVision, Inc.**
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